OUTLINES

OF

MEDICAL JURISPRUDENCE

FOR

INDIAN CRIMINAL COURTS,

BY

J. D. B. GRIBBLE,
MADRAS CIVIL SERVICE (RETIRED),
Late Officiating as District and Sessions Judge,
in Tranquebar, Nellore and Cuddapah.

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TO THE

NATIVE MAGISTRATES, VAKEELS AND POLICE

OF THE

CUDDAPAH DISTRICT,

AMONGST WHOM A GREAT PORTION OF MY SERVICE WAS SPENT,

THESE RESULTS OF MY EXPERIENCE

ARE DEDICATED,

IN THE HOPE THAT THEY MAY PROVE OF SOME LITTLE SERVICE.

PREFACE.

When the compilation of a short Hand-book on Medical Jurisprudence was suggested to me in 1883, the late Dr. Rogers, the Chemical Examiner of Madras, consented to aid me in the work, which was to be the joint-production of us both. The section on poisons was to have been undertaken entirely by Dr. Rogers, and I have reason to believe that he would have been able to give some new and interesting information, especially with reference to vegetable poisons. Unfortunately, however, Dr. Rogers died in the middle of 1884, without leaving any notes. The portion which I had undertaken to furnish, was then nearly complete, and I therefore resolved to employ the leisure which my retirement from the Service, in July 1884, gave me, in abstracting, from the various authorities on poisons, such information as I considered might be of importance. Dr. Rogers' successor, Surgeon-Major McNally, most kindly agreed to help me in the correction and revision of the proofs, and to him I am indebted for several new and important items of information.

Had Dr. Rogers lived, the book would probably have been more exhaustive, and might, perhaps, have been of service to professional men. In its present form, I can only expect that it may be of some use to Officials, such as those to whom I have dedicated it. That some such book is required, would seem to be an undoubted fact, for at present medical jurisprudence does not form one of the subjects of examination to qualify for a magistrate, a vakeel, or a policeman.

Coming from a civilian, I can scarcely expect that, in a medical point of view, the book will be entirely free from mistakes, but every care has been taken to follow the most reliable authorities, and to illustrate the different points by cases that have actually occurred within my own experience.

Two subjects have been purposely omitted, which belong to medical jurisprudence, namely: Insanity and Insurance, to which belongs also Survivorship. Questions of Insanity, however, are scarcely likely to be settled by the officers for whom this book is primarily intended, and the subject is one about which there is so much difference of opinion, that I deemed it expedient to omit it altogether. Insurance and Survivorship involve points which arise almost entirely in the civil courts, and seemed therefore to be unnecessary in the present work. Should, however, the book reach a second edition, and it be considered advisable to do so, these subjects will be treated hereafter.

With these words of explanation, I must leave my little book to its fate, only adding my best thanks to the gentlemen who have kindly assisted me in its production.

J. D. B. (

MADRAS,
1*st March* 1885.

OUTLINES OF

MEDICAL JURISPRUDENCE FOR INDIA.

INTRODUCTION.

Preliminary remarks.

SOME authors claim for medical jurisprudence a very wide field, but it is not the object of this book to discuss more than the outlines of medical jurisprudence, a knowledge of which is required for the criminal cases which come before the courts. Nor is it supposed that the scientific witness will gain any more help from a perusal of this book than he possesses from his own knowledge. There is, however, a very large class of men in this country, who, though their daily avocations bring them into constant contact with the criminal courts, have little or no knowledge of medical jurisprudence. Police, vakeels and magistrates are apt to consider that a knowledge of medical jurisprudence can only be acquired with a knowledge of medicine, and the consequence is that there are many trials which are carried through their various stages without the slightest enquiry into *medico*-legal points which are of the utmost importance, and an elementary knowledge of which might possibly save many an innocent man from punishment, or obtain the conviction of the guilty. It is for this class of persons that this book is intended; and it does not profess to give more than the outlines of the science, with such practical hints, obtained from many years of magisterial and judicial experience, as may prove of service in the conduct of criminal cases. It simply opens a door, through which the student may see the many vast halls through which he has to go before he can pretend to be a real master of the science.

Necessity of some knowledge of medical jurisprudence.

Dr. Taylor, the most eminent of medical jurisprudents, says: "*Medico*-legal knowledge does not consist so much in the acquisition of facts, as in the power of arranging them, and in applying the conclusions to which they lead to the purposes of the law. A man may be a most skilful surgeon, or a most experienced physician; his mind may be well stored with professional information; yet, if he is unable by the use of simple language to make his ideas known to others, his knowledge will be of no avail. One far below him in professional standing and experience may make a better medical witness." In the same way it may be said, that any man with ordinary common sense, and the talent of arranging facts, may, after mastering the rudiments of medical jurisprudence, be able to prosecute or defend a case with success. Writers on medical jurisprudence are almost exclusively medical men, their readers are chiefly medical men, and the information is given with a view to the witness-box, where the medical man plays so important a part. Of course, without a scientific training in medicine, the student cannot expect that his opinion will be called for as an expert; but a witness, however great his knowledge may be, can only give his evidence in answer to questions put to him. It follows, therefore, that in order to be able to examine or cross-examine a witness properly, the vakeel or lawyer must have a knowledge of the questions to be asked, and it will depend upon the questions that he puts, whether he will be successful in eliciting from the witness all that bears upon the case. The examination of a medical witness in this country is only too often of a most perfunctory character, and there is frequently no cross-examination at all. In the majority of cases before the magistrates, the prisoner is never defended, and, unless he is a well-to-do man, he is generally undefended in the higher courts. This is a matter greatly to be regretted, and there is a great deal in what has often been urged in the Public press, that Public defenders should be appointed as well as Public prosecutors. As regards the police and the subordinate magistrates, if they possessed a better knowledge of the elements of medical jurisprudence, they would be able better to understand the points to be worked out, and would take more pains than they do at present, to record even the minutest details. Medical men are by no means infallible, though they are often inclined to be dogmatic, or, as Taylor says, "they are apt to confound what is mere matter of belief, with proof." During late years the science of medical jurisprudence has made great strides. In the majority of cases certain facts have become established; and in other cases it has been shown that symptoms, at one time considered certain tests, are no longer so. It should no longer be possible for a medical witness to dogmatize unless he can show his reasons for doing so. If he cannot do that, and has merely his own opinion to set against the received authorities, his evidence is of little value.

Necessity of careful observation

It has been remarked by a learned Scotch judge, in a trial for murder, where the prisoner was acquitted, mainly owing to carelessness of observation when the body was first seen, that "*a medical man, when he sees a dead body, should notice everything.*" In this country it rarely happens that a medical man sees a body when it is first found. It is generally sent to him for examination many hours after death has occurred. In nine cases out of ten the preliminary examination is conducted by the police and the village authorities. Upon them, therefore, devolves that first and most important duty of observation. It is, however, melancholy to find how grievously this duty is in most cases neglected. The inquest paper, or mahazarnamah, prepared by the police and village authorities, is generally most unsatisfactory, and it almost always happens that evidence is elicited at the trial regarding the state, position, of the body and its surroundings which have found no mention in the inquest paper. This carelessness opens the door to concocted evidence on one side or the other, and it must be remembered that subsequent evidence of facts, not mentioned in the first report, is always open to suspicion. To take one point which is alluded to further on in the test. I can recall to mind but few cases of murder inwhich the witnesses who were present at the finding of the body, have been able to say whether it was cold or warm. Even in England this is a point which Taylor says is frequently omitted to be observed, and, as he justly remarks, this omission "may give rise to great inconvenience if not to a failure of justice." To those persons whose duty it is to collect the evidence for the prosecution, it may be said that every omission in the matter of observation is a point which the prisoner can score in his favour. Whether he will do so or not is another matter. If he is an ignorant man, and is undefended, your omissions will probably not be noticed; but if you have a clever vakeel or lawyer to cross-examine you, who knows something of medical jurisprudence, you may feel sure that his questions will turn, not so much upon what you have observed, but upon what you have neglected to notice. Each omission will then become a weapon of defence.

It frequently happens that a medical witness says that, on examination of a dead body, he has found marks of blows, but it very rarely occurs to the prisoner's vakeel to ask the witness whether he has applied the only reliable test for distinguishing between false ecchymosis (hypostasis) and true ecchymosis, *viz.*, incision. It is probable that many sub-magistrates and vakeels are not aware that there are certain *post mortem* appearances which exactly simulate marks caused by blows, and if the medical witness has not applied the test, his opinion regarding the cause of these remarks is worthless. I have certainly had a medical witness before me who, on being questioned, did not know what hypostasis was.

Medical reports, what they should contain.

Medical Reports.—Medical officers who conduct an examination, or a *post mortem,* should endeavour, as much as possible, to avoid technical terms. The report is not intended to give them an opportunity of displaying their learning, but of conveying information to others. This is best done by the use of ordinary and intelligible phraseology. Let us take the case of an apothecary who is sent up from college to take charge of a mofussil dispensary; if, in his report of an examination of a dead body, he where to say (what has been said in a case quoted by Taylor), "The only morbid appearance of the brain was an atheromatous deposit in the Pons Varolii, near the situation of the locus niger," it is ten chances to one that the sub-magistrate to whom this report comes will not be any wiser than before.

Taylor gives another amusing instance. A medical man in court was describing the injuries he had found on the prosecutor. He said that he had found him suffering from "a severe contusion of the integuments under the left orbit, with great extravasation of blood and ecchymosis in the surrounding cellular tissue, which was in a tumefied state."

Judge.—'You mean, I suppose, that the man had a bad black eye?'

Witness.—'Yes.'

Judge.—'Then why not say so at once?'

Knowledge, which is locked up, as it were, in technical terms, is of no use except to the possessor of the key. It may be very useful to the owner of the key; but, like a miser's wealth, it is of no good to any one else. If you wish your knowledge to be of any use, you must make yourself understood.

Avoid, as far as possible, the expression of any opinion. Record facts, and wait until your opinion on those facts may be asked for. I remember a case of considerable importance—it is discussed in detail hereafter as the Suriyana Kovil Case—in which a body was found hanging. The apothecary who first examined the body gave it as his opinion that death had been caused by hanging, and that owing to the absence of any marks of violence, the hanging had been suicidal. It is clear that the latter part of this opinion was premature. All that was wanted was an opinion of the cause of death. Whether it was a case of suicide or of homicide was for the magistrate and the judge to decide and could depend only on the evidence.

In another case I remember an apothecary swearing that he believed the prisoner had caused an abortion by inserting a stick into her private parts. There was no doubt about the woman having been delivered; the only question was whether it was an abortion self-caused, or an ordinary miscarriage. The apothecary had examined the woman three days after the delivery. There was then no lochial discharge, and all the symptoms that he could describe consisted in a slight redness of the parts. It transpired that when the woman was brought for examination, the apothecary was told that she was suspected of having caused abortion. Before conducting an examination, the medical man should ask no questions from the police or the parties interested. He should state what he finds, and found his opinion simply upon those facts and nothing else. An examination of this kind will probably give him more trouble than when he knows what to look for, but the result will be far more satisfactory to the court before which the evidence has to be recorded. Dr. Caspar, the eminent German criminal doctor, is a striking example of the value of medical evidence founded on a thorough independent examination. He is most cautious in forming an opinion, but when he does so, it carries double weight. Two of his reports are given as an example of what a report should be in the chapter on strangulation.

Caution to be exercised before expressing an opinion.

In this country especially, a medical witness should be most cautious in giving his opinion as to the cause of death. It often occurs that the ostensible cause of death is not the actual cause. For instance, it does not follow that in the case of a body found hanging, the cause of death was hanging. The body may have been hung up after death, which may have been first caused by injuries, and, possibly, by poison. Instances have occurred, in which poison has been found in the stomachs of bodies found hanging, and Dr. Chevers alludes to the frequency of the practice in this country of hanging up the bodies of persons who have been otherwise murdered. This is a subject which will be discussed in more detail in the chapter on hanging, and is only alluded to now in order to point out the necessity of a thorough *post mortem* examination, even when there is seemingly an ostensible cause of death.

Examine most carefully the size and position of all external wounds. The case of *Reg.* v. *Gardner* is one of the leading cases on this point. Here a woman was found dead, her throat cut, and a razor in her right hand. The wound in the throat, however, was in such a direction that it could not possibly have been caused by the right hand, and there were cuts on both hands, which could only have been caused in a struggle, proving beyond a doubt that a murder, and not a suicide, had been committed.

Be careful in noting any signs, which may go to show whether the wounds were caused before or after death. An interesting case showing the importance of this point, was tried at the Cuddapah Sessions in 1873. The body of a man was found in a well, and certain persons were accused of having thrown him in. There were no external marks of injury except that one of the ears was missing. At the trial it was urged for the defence that the deceased had accidentally fallen into the well, and the ear had been eaten off by fishes, crabs, &c. Although the body had been examined by a medical man directly it was found, there was no reliable evidence to show whether the ear had been cut off before or after death. If it had been cut off before immersion, it is certain that there would have been some contraction of the edges of the wound, which would not be the case if the ear had been bitten off by fishes after death. The accused were acquitted, and the death was held to have been caused by accident.

Do not be deterred from a *post mortem* examination on account of the decomposed state of the body. Of course, there are cases in which decomposition is so advanced, that an examination is impossible; but there is good reason to believe that cases occur where decomposition is given as a reason for not holding an examination, when one might really have been held. Dr. Caspar once examined the body of a woman who had died ten months previously by falling into a cess-pool. Not only was the body highly decomposed, but a portion had been converted into adipocere (flesh-wax). The woman's master was suspected of having seduced the deceased, and of having thrown her into the cess-pool, fearing that she would give birth to a child, and the result of the intimacy become known. Caspar knowing that the womb resists the action of decomposition longer than any other part of the body, persisted in his examination, and found that the womb contained no fœtus, and that, therefore, a great part of the suspicion was unfounded.

Be most careful in enquiring whether, when the body was found, it was warm or cold. Allusion has already been made to the importance of this point, but the case of Gardner, already mentioned, may be given as an instance. In that case two persons were accused of the murder, and the innocence, or guilt of one, depended entirely upon the time it takes for a body to cool. The body when found was rigid, and if rigidity could have set in within the space of four hours, the murder must have been committed by the second prisoner, a woman named Humbler, who, for four hours previous to the finding of the body, (about 7-30 A.M.) was the only person in the house. If it takes four hours and more for rigidity to set in, which is the time fixed by the most experienced physicians in Europe, the murder must have been committed by Gardner, who, up to that time, was in the house and in the same room with the deceased. Other circumstances tended to fix the guilt upon Gardner, and he was convicted, the woman Humbler being acquitted; but had the body been warm at the time it was found, there can be no doubt that Gardner would have been acquitted, and Humbler probably convicted.

Points to be noted when a body is found.

In this country, where there are so large a number of deaths reported as from drowning, it would seem advisable that every case of suspicious death should be sent to the nearest hospital for *post mortem* examination.* On receiving notice of a suspicious death, the village authorities should at once send information to the nearest police station, and the enquiry should commence. The following are some of the points about which the fullest information should be available :—

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* For fuller remarks on this point, see Part II, chap. I.

(1) When the body was first found, was it warm or cold ? Was it rigid or not ?

(2) Had decomposition set in ?

(3) What was the exact time of death ?

(4) When, where, and with whom was the deceased last seen alive ?

(5) What was the exact attitude and position of the body when found ?

(6) Note the position of all surrounding articles, such as bottles, papers, weapons or spilled liquids. These articles should be collected and preserved.

(7) Note the exact position and size of any marks of blood on the body or in the vicinity. State whether the blood was dry or liquid.

(8) Did the deceased show any special symptoms ? If so, when were they first noticed, and how long did they continue ?

(9) How long after partaking of any meal, food, drink, or medicine, did the symptoms occur ?

(10) Did they intermit, or did they continue without mitigation until death ?

(11) Secure any portion of the food or medicine which may be suspected to contain poison.

(12) Secure all matter vomited or evacuated.

Note.—When securing food or vomited matter, be most careful to put each matter separately in a *clean* pot or vessel ; do not take any old pot, or piece of pot, that may be offered ; but insist upon being supplied with a new and clean earthen vessel, which should at once be securely fastened and carefully guarded until it is given into the hands of the medical officer.

(13) Note the external appearance of the body and all marks of violence.

(14) Note any other suspicious circumstance and all *statements of suspected parties.*

(15) Finally, after having noted these points, and after having caused them to be entered in the mahazarnamah or inquest paper, which should be signed by the village authorities, have the body at once taken to the nearest hospital or dispensary. Accompany it there, and take with you all matters and articles connected with the case. Be careful that no unnecessary delay occurs in this respect, for it is of importance that the body should, if possible, arrive at the hospital before decomposition sets in.

The inquest.

It very often happens that the inquest held by the village authorities is nothing more than a farce. Owing to their dread of pollution from being brought into contact with a dead body, the members of the inquest often sit down at a distance and afterwards sign the record upon hearsay. The police officer should insist upon the members of the inquest personally satisfying themselves of the correctness of the statements in the inquest paper. This paper should contain full and detailed information on the several points just mentioned. If information is omitted from the inquest paper and subsequently supplied, it is always open to suspicion.

Police notes.

The police officer should also remember the necessity of taking full notes for his own information. When called upon to give evidence, he should not attempt to speak merely from memory; but, if he has taken notes, he should ask to be allowed to refer to them. Considerably more weight will be attached to his evidence if it is shown that he exercised an intelligent observation, and if he shows himself cautious before committing himself to a statement of opinion. If he has omitted to note any special point it is far better, should he be asked a question, to at once admit the omission, instead of making a guess, which may very possibly be proved to be wrong.

ON EVIDENCE IN INDIA.

THE great difficulty, with which all magisterial and judicial officers in India have to contend, is the false evidence which daily comes before them. It is, probably, no exaggeration to say that a case scarcely ever comes before a criminal court, in which there is not a certain amount of false evidence. Even in cases which are substantially true, there is generally a certain amount of concocted evidence. This evidence breaks down and is proved to be false, and the result very often is that a true case gets let off. The duty of a judge or a magistrate in this country is, generally speaking, not so much to decide which story is the true one, and which the false one; but to separate the falsehood and the truth on both sides, and, having eliminated the former, to decide upon the case. Mr. Holloway, for many years a distinguished judge of the Madras High Court, frequently remarks in his judgments, that the legal maxim, *falsum in uno, falsum in omnibus*,* does not apply to this country. In England the discovery, that some of the evidence for the prosecution had clearly been concocted, would, probably, be quite sufficient to ensure the release of the accused; but, if such a rule were to be followed in this country, there would scarcely ever be a conviction. The native mind is, generally speaking, unable to understand that the truth 'unadorned is adorned the most,' and a witness, therefore, adds on to what he knows, not so much with the intention of speaking a falsehood, but in order to make the case as safe as possible. Instead of confining himself to what he knows, or has seen, he speaks of what he has heard, or what he thinks, took place. An amusing instance of this moral perversity is given by Dr. Chevers. A man named Luxiah bin Budiah, was tried for perjury at Khandesh (1837). At a trial for highway robbery, this person had given evidence under the name of Kalliah bin Dowjee, and had sworn that, on a certain date, he had followed up the footprints of certain robbers, &c. On being cross-examined respecting various particulars, he had not come prepared to answer; he admitted that his name was not Kalliah bin Dowjee, but Luxiah bin Budiah, and further that he was not present when the robbers were traced. He further said that his friend, the *real* Kalliah, was sick and unable to attend the court, and that, therefore, he came to depose for him; that the facts to which he had deposed were perfectly true, and that although he was not himself an eye-witness, yet they were notorious to all the people of the village. He was sentenced to one year's imprisonment with labour, and to receive twenty-five stripes. On reference to Goodeve, we read that "Mahomedan law, in certain prescribed cases, allowed the singular expedient of giving evidence *by proxy*. In the event of the death of the principal witness, the absence of the witness on a three days' journey, or his sickness, and in a certain class of cases where the judgment was not barred by doubt, a witness, or the person who would have been such, was permitted to supply a proxy, substituting another person to detail facts or opinions for him." The following case occurred within my own experience, and shows how false evidence can be brought into a true case. A merchant was passing through a village with a number of bandies laden with timber. A number of Madigas danced the 'sword-dance' in front of the bandies. This is a dance which, when performed, always excites the indignation of the Malas, (these two classes of men form the representatives of the left and right hand castes amongst the Pariahs). The Malas protested against the dance, a fight followed, and a Mala was so severely wounded that he subsequently died of his injuries. An attempt was made to prove that the merchant had struck the blow of which the Mala died, but when the witnesses came to be cross-examined regarding the details of the fight and what subsequently happened, they broke down entirely. There were minor discrepancies regarding the actual spot where the blow was struck, but three of the witnesses were palpably inconsistent. One said that deceased, after he had been struck, was carried to the choultry, where he lay insensible for the whole of the night, until the police came next morning; a second said that the deceased, after he was struck, was left on the road, where he remained groaning and insensible the whole night; and the third, a police constable, said that deceased, immediately after he had been struck, walked about two miles to the next police station, showed his wounds, and laid a complaint against the prisoner! This witness, in describing the injuries, had taken no notice, or no complaint was made, of the injury which subsequently caused death, namely, a blow on the skull which caused a piece of the bone to impinge on the brain. Another wonderful incident in this case was that the deceased was sent to the hospital and discharged cured after about five days, the injury to the brain having been unnoticed. A few days afterwards he was again admitted, and died of the injury, which had been previously unremarked! In this case there could be no doubt that there was a fight between the Madigas and the Malas, when the latter obstructed the procession; but after a man had been seriously wounded, it was attempted to put the responsibility on the merchant, who, during the fight, was lying ill in his bandy. False evidence is as often given or concocted through fear as through enmity or evil motives. The following case tried at the July sessions (1884) at Cuddapah, is a good example. Two brothers lived together. They were well-to-do, and their house had been twice robbed. A noted robber, who had several times been convicted, and who was the terror of the neighbourhood, lived in the next village. One day, one of the brothers went away for two days on business; the other brother remained at home. During the night he heard some one breaking into the hut where their goods were kept. He went to the door and saw the robber they so much dreaded, leaning down, trying to open the lock of an inner compartment. He rushed in with a stick and struck the man a blow on the head. The robber stooped down to pick up a stick by his side, and the man gave him another blow. A neighbour then came in, and, seeing the fallen man, native-like, struck him a third blow. It was then found that the robber was dead. Becoming frightened, the men put the corpse in a bandy and drove off two miles to the railway, where they placed the body on the line just before the mail train passed. The body was found next morning with the head cut off and the legs broken. The train had passed over the neck and the legs. The remains were sent into hospital and the skull was found to be fractured in two places, evidently by blows, and the spleen and liver fearfully ruptured. From the spot where the body was found, up to the prisoner's house, were discovered marks of wheels and a track of blood. Both brothers were accused of murder. One pleaded an *alibi*, which was true, and the other denied all knowledge of the robbery or of the death of deceased. It had been a moonlight night, and almost all the neighbours had turned out at the noise, yet some were found to swear that the brother, who at the time was several miles off, was one of the persons who put the corpse in the bandy. After the prosecution had closed, and before the summing up, the second prisoner, wisely persuaded by his counsel, made a clean breast of it, told how the robbery took place, and that, dreading the known strength and violence of the robber he had "made sicker" and struck several times, and then fearing the consequences, had driven the body off, helped by a neighbour, to the railway. The second prisoner was acquitted on the ground that he had acted in justifiable defence of property. The first prisoner, who had been absent, was also acquitted. If the prisoners had only told every thing at first, they would probably have never been committed.

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* "False in one thing, false in all."

Another reason for false evidence is ignorance. A witness comes up on behalf of the accused or, it may be, of the prosecutor. He is first examined by the vakeel for his own side. He knows that this vakeel will ask him no embarrassing questions, and answers everything off 'pat'. In fact, he probably says a great deal more than he really knows. When the other vakeel gets up, he knows that he is retained on the opposite side, and his questions may, therefore, be dangerous. Accordingly he thinks the best thing to do is to answer every question in the negative, and is not deterred even when the answer is palpably an untruth. He soon gets into difficulties and then has to admit that he has been giving false answers. This, of course, throws suspicion upon the whole of his previous evidence, the principal part of which may have been true. The idea of a common native witness of the uneducated class, seems to be that he must help the judge to convict or acquit the prisoner, as the case may be. "This or that is what really happened," he thinks, "but if I don't tell the judge he will never find it out." Of course, there are a great many cases in which the evidence is wilfully false, but I believe that in a very large number of cases, where false evidence is given, it is not intentional, and it only requires a little patience and good humour to find out what is true and what is false. In civil cases this is much more difficult, and there is scarcely a civil case that comes before the courts in which there is not wilful perjury and frequently forgery on both sides. These cases generally have to be decided on hard facts and on circumstantial evidence. Good circumstantial evidence is generally supposed to be the best kind of evidence that can be produced, but it is remarkable in this country how frequently circumstances are forged so as to fit in with one another.

False confessions are also not uncommon. In Europe it sometimes happens that a man will make a false confession of a crime that is occupying public attention, but it is generally found that the person is of weak intellect. In this country, however, confessions are sometimes made simply because the accused know there is strong suspicion against them, and think that, possibly by confessing, they may get off the extreme penalty. Dr. Chevers mentions several cases of persons who confessed to having murdered men who were still living, and who had never been attacked. This is often ascribed to undue pressure of the police, and there can be no doubt that fear of torture has produced many a false confession. It would be a bold thing to say that police torture no longer takes place, and I have frequently had cases before me where confessions had been made, which were subsequently withdrawn, and which I could account for in no other way than that undue pressure had been used by some one. The subject of police torture is alluded to further on, and I will not, therefore, dwell upon it here. It may, however, be as well to allude to the remarkable success which attends the efforts of some of the special dacoity inspectors. One of these officials never brought a case into court without a confession from one or other of the prisoners. There is every reason to believe that the cases brought up were true cases, though whether all the details of the confessions were true is another matter. There can be no doubt that a large number of these confessions were obtained, not by torture but by persuasion. A prisoner is told that if he will make a clean breast of the matter, he will, probably, get a comparatively slight punishment, and in the meantime his family shall be provided for. The villagers themselves are only too glad to get a dangerous gang run in, and make arrangements for the provision of the family of the man who confesses. The confession once made leads to other evidence corroborating it, and the gang is broken up. It is, of course, a fact that there are a number of entirely false accusations, but I believe it to be equally a fact that the persons sent up for trial are, generally speaking, the real offenders, though it probably very often occurs that the evidence sent up in support of the accusation is entirely false.

Zeal in detection sometimes carries the police a very long way, and Chevers quotes a case in which the police, having found an unrecognizable dead body, manufactured a murderer. A man happened to be missing, and the man's concubine was induced to accuse three persons of having murdered him, and identified the corpse as that of the missing man. The man himself, however, turned up just at the right moment, and the prisoners were acquitted. Subsequently three of the police were convicted of having extorted confessions, and sentenced to five years' rigorous imprisonment.

The foregoing remarks are nothing more than an allusion to this subject. To treat it exhaustively would require a whole volume, but to those who wish to study the subject further, and to read some remarkable cases of false evidence, fabricated charges and police torture, I would recommend a perusal of Dr. Chevers' work, in which this subject, (as indeed are all other subjects), is treated with the greatest detail.

PART I.

CHAPTER I.

WOUNDS AND INJURIES.

MEDICAL evidence is required principally in cases where the injuries have caused death. In cases where the injured person recovers, his own evidence is available, though it may often occur that medical evidence is required in corroboration, or to prove that the wounds have been self-inflicted. We will, therefore, first consider cases in which death has occurred. These may be divided into two classes: (1) death caused by wounds, or external injuries; and (2) death caused by hanging, drowning, suffocation, strangulation, smothering, and starvation.

What are wounds.

Under the head "Wounds" fall all those injuries which come under the definition in the Penal Code of hurt and grievous hurt. It depends upon the nature of the hurt caused, the intention of the party causing it, and the result of the hurt, whether the accused is guilty of simple hurt, grievous hurt, attempt to commit murder or murder itself.*

Cause of death

This is the first and most important question which arises, and is one about which a doubt arises oftener in this country than in Europe. As already stated, it frequently happens that the apparent cause of death is not the actual cause of death. It is, therefore, of the utmost importance, that as soon as the dead body is discovered, the surrounding circumstances should be most carefully noted. When possible, a

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* The old surgical definition of a *wound* makes it consist in a *solution of continuity*. This definition would not include contusions, concussions, bruises, simple fractures, dislocations and sprains, since the solution of continuity [illegible]; [illegible] these injuries as defined in the Penal Code.

The inquest.

dentification of emains.

corpse should be left untouched in the position it has been found until the arrival of the police, or, if they are too far distant, until it has been inspected by the village authorities. The result of this inspection must be at once reduced to writing, and in this document—called in this presidency a mahazarnamah—every circumstance should be carefully noted. In the mofussil, the village magistrate occupies the position of the coroner, and it very often depends upon the accuracy with which his report is drawn up, and the confidence which can be placed upon it, whether a crime results in detection or not. The first point is the identification of the body. In this country, where there are so many wild animals, it is often very difficult to identify human remains as being those of a supposed deceased person. A case occurred in the June sessions at Cuddapah, 1883, in which the body of a woman, who had been killed twenty-six hours previously and left in a vauka or dry river-bed, was found entirely stripped of flesh. The body was, however, identified by a missing tooth in the jawbone and by some of the articles of clothing found lying near it. This is, probably, one of the most rapid cases on record in which all traces of flesh have been removed. Generally speaking, from three to four days elapse before all traces disappear, and, even after this lapse of time, bodies are sometimes found almost intact. Owing to the scanty clothing which natives wear, it is often exceedingly difficult to identify remains, and it is, therefore, of importance that nothing should be omitted which can bear upon the question of identification. As a matter of fact, many cases have been convicted, and the convictions confirmed by the High Court, in which there has been no identification of the remains; but, as a general rule, in such a case, the sentence is generally not of death, but of transportation for life. This, however, is not invariably the rule, as will be seen by a reference to the Illustrative Cases, Nos. I and II.

What the maha-
arnamah
hould contain.

After the identification, the different heads enumerated at page 9 should be invariably discussed in detail, and, it must be remembered, that any evidence which may be afterwards brought forward regarding the condition of the body or the nature of the wounds, is looked upon with great suspicion.

In order to be able to decide whether the death has been caused by wounds, it is necessary that there should be some evidence as to whether the wounds were caused before or after death. This is a question which the medical officer who inspects the body will be best able to decide; but still there are some circumstances which it is absolutely necessary the village authorities should note.

Wounds cause after death.

In wounds caused after death—

(1) bleeding may occur, but it is never very copious;

(2) what does occur is venous, and is of a thin fluid character;

(3) the edges of the wound are loose and close;

(4) there is no coagulation in the blood.

Vessels.

Cases have occurred, (see Illustrative Case VI), in which persons have died a natural death; but after death, wounds have been inflicted, and the body has then been placed so as to throw suspicion on an enemy of the deceased's family. In such a case as this, it would probably be easy to detect whether the wounds had been caused after death, but when death has been caused by one act of violence and other wounds are inflicted immediately afterwards, the symptoms given above will often be less marked. The retracted nature of the vessels and edges of the wound is one of the safest signs of the wound having been caused during lifetime. This is a point which a medical man can better decide than a village magistrate, and, therefore, it should be an invariable rule that, however apparent the cause of death may seem to be, wherever it is clear, or wherever there is even a suspicion that violence of any kind has been used, *the body should be invariably sent to the nearest dispensary or hospital.* This, owing to the establishment of a dispensary in almost every taluq of every district, has been of late years made possible. A few years ago, when there was generally only one hospital in a district of several thousand square miles, it was often impossible. Still, however, cases frequently occur in which bodies, where death has clearly been caused by violence, are not sent for medical examination.

The *post mortem.*

When the body is examined at the hospital, great care and attention must be bestowed upon all these points. There are regular rules regarding how a *post mortem* should be conducted, which will be found printed in the Appendix. The medical officer's duty lies exclusively with the body itself, the stomach and intestines he has nothing to do with; they must be sent to the chemical examiner. The necessity of care and cleanliness in the disposal of the stomach, &c., is pointed out further on, but a case may be here alluded to quoted by *Beck*, in which a stomach was negligently laid on some fine white sand. At the subsequent examination particles of this were found, and gave rise to an idea of poison by means of powdered glass. As, however, these particles must necessarily have been found *outside* the stomach, it is presumed that this idea was soon dispelled.

Size and description of wounds to be noted.

Has the wound been inflicted before or after death?

If there are wounds on the body, note carefully their size and description, and the direction in which they run, having especial regard to any facts which may lead to forming an opinion as to whether they were caused before or after death. *Hæmorrhage* is generally supposed to be *primâ facie* evidence that life was present when the wound was inflicted. This, however, is not always the case, because hæmorrhage may in some cases be observed in a dead body, as, for instance, in cases of apoplexy, and in various forms of protracted or malignant fevers. In these instances, however, it is of a dark colour, and evidently more fluid and venous than in a natural state. There will also be an absence of coagula. Again, blood sometimes flows from an incision in a dead body and sometimes even from a touch, which no doubt gave rise to the idea of a corpse bleeding if the murderer touched it. Bleeding, therefore, is no proof that the wound from which the blood comes was caused on the living body. "But" (says Beck) "hæmorrhage may be wanting (from the wound), and on dissection the blood is found fluid in the heart and its large vessels, the spinal canal, the lungs, or the brain. *Is this to be deemed a proof of violent death?* I apprehend not. All that can be said is that fluidity is most common in such cases as from narcotic poisons, lightning and the like; but it is also observed in sudden death from ordinary causes, and particularly in apoplexy, and even is occasionally not wanting in the usual forms of disease that come under the examination of the anatomist."

Contused wounds.

The same remarks refer to bruises, and a careful examination is required in order to decide whether they have been caused before or after death. It is a settled point that unless caused immediately after death, a blow is not capable of causing *ecchymosis*. *Caspar* has shown by a number of careful experiments, that, in the same way, the application of fire is not capable of causing on a dead body the appearance of vesicles caused on a living one. It is, however, of importance to remember that, although blows inflicted shortly after death will imitate contusions caused during life, still they will only imitate *slight* contusions. A severe blow caused after death will only produce the same appearances as a slight contusion caused during life. If, therefore, it is palpable that the blow has been a severe one, and the appearances one would naturally expect from a severe blow, are wanting, (such as swelling from the extent of the extravasation, a yellow margin round the black mark, effusion of blood into the cellular tissue, and an incorporation of blood with the whole true skin, rendering it black, and increasing in firmness and resistance), there can be no doubt that the blow has been caused after death, even though there may be ecchymosis.—(See Investigations of Dr. Christison at Edinburgh in reference to the murders by Burke and Hare.) It cannot, however, be taken as a hard and fast rule, that blood after death will not coagulate, for Dr. Christison says in his paper on the effects of blows after death, that he has known blood to coagulate firmly eight hours after death, and to have seen blood coagulate as it flowed in a *post*

Difference between a blow caused before or after death.

Rule not to be taken as a hard and fast one.

mortem examination, in one case twelve hours after death, and in another upwards of thirty hours after.

Certainty of the rule as regards a blow given after *rigor mortis* has set in.

But it may be accepted as a certainty, that after the body has become cold, and the *rigor mortis* has set in, *i.e.*, about three hours after death, the muscles have acquired rigidity, and that, therefore, a blow, however severe, would leave none of the traces caused by a blow administered before death.

Appearance of wounds inflicted during life.

As a general rule, open wounds, if received before death, are marked by red, bloody and separated edges, and present a gaping appearance. Blood is also more or less collected in the cellular tissue.

Appearance of wounds inflicted after death.

Wounds inflicted after death are livid, and their edges close together, and if there is blood to be found in the wound, it will be of a liquid venous character. As a proof of the care which is required in the conduct of a *post mortem*, and the terrible results which an omission, or an error of judgment, may entail, see Illustrative Case No. V, in which the failure to correctly judge certain symptoms led to the judicial murder of an innocent man.

Case of *Montbailly*.

Position and course of wound to be described.

The course of a wound and its position is very often of the greatest importance in determining whether the act that caused death was one of murder or of suicide. For instance, it is most improbable that a right-handed person could inflict a wound which runs from right to left, and, again, homicidal stabs run generally from above downwards, whereas suicidal ones are in the opposite direction. The case of *Gardner*, already quoted, is a very interesting one on this point, and a somewhat similar case was tried at Cuddapah in the April sessions of 1884 (see Illustrative Case No. VII).

Time of death.

Rules, which experience in Europe has caused to be adopted regarding the period when death occurred, are scarcely applicable to this country, where the different stages a dead body passes through, are so much more rapid than they are in a cold climate. It is, however, certain that decomposition sets in much earlier in an injured than in an uninjured body, and commences first in the injured portions. The result of this is that the injuries appear to be of a much more aggravated form than they ought to be considered by a medical jurist (Taylor).

Death where there is no internal or external mark of injury.

Where death has occurred, and there is no external mark of injury, the opinion of the medical officer should be expressed only after most careful examination of *all* the parts. There are numberless recorded cases in which, after a quarrel or a struggle, sudden death has taken place owing to the rupture of some internal vessel or organ brought on by excitement or sudden passion. When the cause of death cannot positively be ascribed to any injury, external or internal, or to any disease, the stomach and intestines should invariably be forwarded to the chemical examiner; but even when no cause of death can be discovered in the *post mortem,* nor any trace of poison in the stomach, it may happen that death has been caused by violent means.

Death from shock.

Thus, death may be caused by a shock to the nervous system by means of violence, which, however, may leave no trace, either external or internal. This is often the case where there has been a blow on the upper part of the abdomen or on the pit of the stomach, and "it is admitted by experienced surgeons that a person may die from so simple a cause without any mark of a bruise externally, or physical injury internally, to account for death. On the skin there may be some abrasion or slight discolouration; but, as it has been elsewhere stated, these are neither constant nor necessary accompaniments of a blow" (Taylor). In cases of this kind there may be other evidence to show that violence was used and was the cause of death. Thus a trial took place at the Liverpool autumn assizes, 1837, wherein several persons were charged with the manslaughter of the deceased, by kicking him behind the right ear. The medical witness deposed that there was in this spot the mark of a severe contusion, but there was no injury whatever to the brain, and the body was otherwise healthy. He very properly ascribed death to the violent shock given to the nervous system, and the court held that the cause of death was satisfactorily made out. The person who inflicted the injury was convicted. Another kind of injury common in this country, which is calculated to cause death by shock, is the squeezing of the testicles. This, however, is generally accompanied by other injuries, and is alluded to under the head Suffocation. Where there are many wounds or marks of injuries, it is not necessary to prove that any one in particular was sufficient to cause death, for the shock to the system caused by a number of blows, not one of which would in itself be fatal, has often been proved to be sufficient to cause death.

Death of wounded persons from natural causes.

Dr. Taylor's remarks on this head are of such importance, and especially in India, where, in the majority of cases, prisoners are undefended by counsel, that they are given *in extenso:* "It is by no means unusual for individuals who have received a wound, or sustained some personal injury, to die from latent natural causes; and as in the minds of non-professional persons, death may appear to be a direct result of the injury, the case can only be cleared up by the assistance of a medical practitioner. Such a coincidence has been witnessed in many cases of attempted suicide. A man has inflicted a severe wound on himself while labouring under disease; or some morbid change tending to destroy life has occurred subsequently to the infliction of a wound, and death has followed. Without a careful examination of the body, it is impossible to refer death to the real cause. The importance of an accurate discrimination in a case in which wounds or personal injuries have been caused by another, must be obvious on the least reflection. A hasty opinion may involve the accused in a charge of manslaughter; and although a barrister might be able to show on the trial that death was properly attributable, not to the wound, but to co-existing disease, yet it must be remembered, that the evidence of a surgeon before a coroner or magistrate, in remote parts of this country (England) may be the means of causing the person charged to be imprisoned for some months previously to the trial. In a case reported by Dr. Berncastle, the deceased, a boy, died from an internal strangulation of the intestine from morbid causes after wrestling with another boy, who might, but for a careful inspection of the body, have been erroneously charged with having caused his death."—(See Illustrative Case VIII.)

Death after long periods.

On the other hand, death may often occur from wounds after long periods, and the wounds may be the actual cause of death, though, perhaps, some other act of violence may be the apparent cause. Thus a case is related by Sir A. Cooper, of a gentleman who died of an injury to the head received about two years previously. Taylor says that the longest interval at which a conviction has taken place from indirectly fatal causes is *nine months.* (Under this head see Illustrative Case IX, *et. seq.*)

By what kind of weapon was the wound caused.

This is a question that is always asked in court, but is one which it is not always possible to answer. It is of course easy to say that an incised wound has been caused by a sharp-cutting instrument, a punctured wound by a pointed one, and a contused wound or a fracture by a blunt weapon; but when the question goes further, and it is asked whether a particular weapon caused a particular wound, the answer can seldom be given with certainty. In this respect it is necessary to remember that, owing to the contracting power of the skin and of the flesh, an incised or punctured wound, such as a stab, will always appear to be smaller than the instrument by which it has been inflicted. In the case of a cut (as, for instance, throat-cut) or a slash with a sword or bill-hook, the size of the wound depends to a great extent upon the amount of force used, and a small knife may inflict as large a wound as a big sword; but it often happens that the wound itself will afford evidence as to what weapon could *not* have been used. If the weapon produced is a sharp knife, and the edges of the wound are jagged, torn and lacerated, it can be safely inferred that the wound was not caused by the knife; and the reverse is equally true. If the weapon is blunt with notches, and the edges of the wound are clean and show none of the signs which are to be found in wounds caused by a blunt instrument, it is clear that some sharp weapon has been used. When, however, the appearance of the wound corresponds with the weapon produced, all that can be said, is that the wound *might* have been caused by such a weapon. It is in the power of a professional witness to declare positively that the wound could *not* possibly have been caused by the weapon shown to him, but it is not in his power to state positively that the weapon shown him *did* cause the wound. As regards fractures, the difficulty is even still greater. Bones vary in strength in different persons. The bones of some persons are so exceedingly brittle that they are capable of being fractured by a very small blow from a very light stick. The same refers to the skull, which, with some persons, is much thicker than with others. A very common weapon, which is in this Presidency used in sudden assaults and quarrels, especially between men and women, is the rice-pounder. It is very strange, but Dr. Norman Chevers makes no mention of wounds caused by this deadly weapon, and we can, therefore, only suppose that in the North they are of rare occurrence. The rice-pounder is generally made of hard wood; is about three and a half feet long and about one and a half to two inches in diameter; at one end it is shod with a thin but strong iron plate about an inch or an inch and a half in length. A strong blow from a weapon of this kind is almost certain death, and if, as is generally the case, it falls upon the head, a terrific fracture of the skull is the result. It often occurs, however, that the assailant is not content with inflicting one blow, but strikes two or three, sometimes dashing out the brains of his victim and fracturing the skull to pieces. In some cases a single blow from a weapon of this kind will produce a clean cut in the skull difficult to be distinguished from a sword-cut. Murders with a rice-pounder are generally the result of a quarrel, in which one or both have made use of the foul terms of abuse, which are so common amongst natives; and, as far as I can judge from my own experience, and from a perusal of the printed reports of the Foujdaree Udalut and High Courts, are most common in the so-called Ceded districts: Bellary, Kurnool and Cuddapah, though they also occur occasionally in the other districts. Where death has been caused by one or a number of blows, a description of the wounds is of importance

The rice-pounder.

as likely to throw light upon the amount of violence used, and, therefore, upon the *intention* of the offender. As has been said before, death from a rice-pounder is often the result of a sudden quarrel, but the weapon itself is of so imminently deadly a nature, that it must be in the knowledge of any person of ordinary understanding that a blow from such a weapon is likely to cause death; so that unless grave provocation can be shown, the offender is generally found guilty of murder: it is, however, usual in such cases for the judge to recommend a mitigation of punishment. Thus in the February sessions, 1884, at Cuddapah, a man was convicted of causing the death of a woman in this manner. The prisoner was quarrelling with and beating his wife, when the deceased, his aunt, interfered and expostulated with him. The prisoner seized a rice-pounder, struck the deceased three times on the head and thrice on the body. The head was smashed to pieces, and some of the brain protruded. Death after the first blow appears to have been instantaneous. The judge found the prisoner guilty of murder and passed sentence of transportation for life; but, at the same time, recommended to the High Court a mitigation. This sentence was confirmed on appeal, and a reduction to five years' rigorous imprisonment was applied for.

Presumption of intention from the weapon and violence used.

In Bengal, the weapon with which fractures are most commonly caused, appears (according to Dr. Chevers) to be the *lattee*, a long thin bamboo, used by most natives in walking, and frequently furnished at one end with a small iron ferrule. A weapon of this kind is also calculated to inflict a severe wound, especially upon the head; but the use of it is not so imminently dangerous to life as is that of a rice-pounder, and the intention of the offender will, therefore, be best shown by the amount of violence used. It should, however, be remembered that, when once the passion of a native is aroused, so far as to strike a blow, he seems to be often seized with a kind of frenzy for blood, and goes on striking long after his victim is dead. When in this state of passion he is probably incapable of judging of the consequence of his acts, and it will be a matter for evidence whether this passion has been excited by grave and sufficient provocation. The privilege of causing death in the exercise of the right of private defence, continues only as long as the danger to person or to property exists. Any violence used, after such danger, and with it the right of defence has ceased, is a criminal act. Thus if a man is attacked by a thief or a robber, and he disables him with one blow without killing him, the danger to him has ceased, and he would not be justified in inflicting a series of other blows; and if by so doing he caused death, he would be legally responsible. In a case of this kind, however, this blood frenzy which is so often excited, would, probably, be taken into account in awarding the punishment. For a somewhat interesting and novel case of this kind, see Illustrative Case No. X.

ILLUSTRATIVE CASES.

(Part I, Chapter I.)

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Non-identification of remains.

I. **Reg.** *v.* **Sundanem.** Madura, May to June 1859.—Deceased was induced by two others to leave his village under the pretext of looking for stolen cattle. On the way he was murdered. On the fourth day the remains were found—"his skull in three or four places, grey hairs, a pair of shoes, and a bag with flint and steel. The jackals, vultures, &c., had nearly picked the bones clean." There was circumstantial evidence, and the sentence was : *death* to first prisoner; transportation for life to second.—(*Madras Reports of Foujdaree Udalut,* 1859.)

II. **Reg.** *v.* **Mahabalaya.** Honore, June 1859.—Deceased was a Brahmin, who had been sent to cash a hoondee (or cheque). This was on a Friday. He did not return, and on the following Wednesday the remains of a man, with a Brahminical thread, were found. "The witnesses could not identify the body, as the features were entirely decomposed." Some cloths near the body were identified, and certain persons who had been last seen with deceased, were, on the strength of circumstantial evidence, convicted. The sessions judge recommended transportation for life, because the body had not been clearly identified, but the High Court (Foujdaree Udalut) seeing no reason to doubt that the remains were those of the missing man, sentenced to *death.*—(*Ibid.*)

III.—*Cause of death doubtful.*

Reg. *v.* **Munisami Chetty.** Chittoor, August 1861.—In this case the prisoner was the brother of the deceased, and was charged with having killed him by stabbing him in the eye with a style. An eye-witness spoke to having seen the prisoner stab the deceased in the left eye with a style, and, on interfering, to have received a stab in the breast. Other witnesses spoke to having seen blood issuing from the eye after death. Death followed very rapidly. The body was examined in the hospital two days afterwards. One dresser said that the body was so swollen that he could not discover any wounds. He opened the left eye and temple, *but without any results;* another dresser stated that he saw "a small wound in the corner of the left eye, which he believes to have been the result of a puncture by a needle." The zillah surgeon examined the skull eighteen days after death, and found nothing unnatural about the osseous structure of the orbital cavity, but admitted that there was a fissure through which the style might have been forced to the brain *through the eye-ball,* but could not speak with certainty owing to the advanced stage of decomposition. *Verdict*—Guilty of causing death in the manner described. *Sentence*—Three years' imprisonment with hard labour. In this case it is difficult to understand how a stab of such violence, as to cause almost instantaneous death, could have left such very faint traces. There were, two days after death, when decomposition could scarcely have set in, no other marks of injury on the body. In this case a description of the wound by the village authorities should have been made. The examination by the dressers seems to have been scarcely satisfactory.—(*Ibid,* 1861.)

IV.—*Cause of death presumed.* (*Death from shock.*)

Reg. *v.* **Kolorkandiyilo Ramotti.** Tellicherry, September 1861.—In this case it was alleged, on the one hand, that the deceased had died of cholera, and, on the other, from the effects of a beating he had received the evening before. No *post mortem* was made; several witnesses proved the beating, and others, whose statements contained contradictions, spoke to vomiting and purging. The judge (Mr. Holloway) remarked, "I am satisfied with the assessors that, after this beating, the deceased, a man in good health, lay down greatly enfeebled; that he never recovered from its effects, and that he died of this beating early next morning." The judge disbelieved the evidence regarding the cholera, and, quoting Dr. Taylor, presumed that death followed from exhaustion and a shock to the nervous system. The body appears to have been quickly buried with the knowledge of the village authorities, who are supposed to have connived in representing the death as from cholera.

In the case above quoted, the accused were found guilty of having caused the death of the deceased by beating, and sentenced to three, five, and one year's imprisonment respectively. The sentence was confirmed by the High Court.

A proper inquest and mahazarnamah drawn up by the village authorities, would clearly have been more satisfactory.

As bearing upon this, a case may be quoted which occurred within the experience of the author. During the famine of 1876-77, the officer in charge of the relief camp at Madanapally, paid the camp a visit at night in order to see whether everything was in order. The camp was composed of straw and thatch huts, and the orders were that no lights should be allowed anywhere except in the kitchen, which was built of brick. One of the warders was found asleep with a light in his hut—a lean-to—which he had thrust under the straw of the roof from which the flame was an inch or two distant. The officer pulled the man out, gave him a sound beating on the posterior with his hunting thong, and turned him out of the camp. On his way to the town, which was about two miles distant, the man was seized with cholera, and died of this disease early next morning in hospital.

V.—*Cause of death mistaken.*

A widow named Montbailly, of inebriated habits, was found dead in her room, lying on a trunk with sharp edges. Thirty-two hours after death the body was inspected by a physician and surgeon, who reported that they found ecchymosis and contusions on the arms, thorax, and particularly over the third, fourth and fifth ribs. The neck and upper part of the breast were also ecchymosed. The head was swelled, blood was extravasated under the skin of the face, and the nose was filled with clotted blood. On the eyelid there was a wound of nine or ten lines in extent, which penetrated to the orbit, and which might have been caused by a sharp or cutting instrument, but could not, in their opinion, have produced sudden death. It was reported that the wounds might have been caused either by severe blows or by a fall. A physician, who was present at the *post mortem,* but who took no part in it, gave evidence that the eye was ecchymosed, and that the edges of the wound were irregular and indented.

This evidence, together with proof of frequent quarrels between deceased and her son and daughter-in-law, who lived in the same house, led to the conviction of the latter. The son was broken on the wheel, but the daughter-in-law, owing to pregnancy, obtained a respite. During the interval, the celebrated Dr. Louis was consulted, and the result of his investigation was, that there was no proof of the commission of murder, but rather of death from apoplexy, or some other cause. The following were amongst his reasons for this opinion : Intemperance predisposes to sanguineous apoplexy, and the head of the deceased should have been opened in order that the condition of the internal parts could have explained the cause of the hæmorrhage. A person in a state of intoxication, and, therefore, predisposed to apoplexy, would, on falling against any sharp-edged substance, naturally lose a considerable quantity of blood, and also have the arteries and veins of the head much distended. It was held impossible that hæmorrhage from the wound in the eye could have caused death. As to the ecchymosis, or livid spots on the thorax and arms which were attributed to blows or a fall, M. Louis observed that *they were the ordinary appearances found on those who die in a state of intoxication.* The result of this further medical evidence was that the former decision was revoked, and the memory of the executed son was exonerated two years after his execution (1772).—(*Case quoted by Beck.*)

VI.—*Mutilation of bodies after death.*

Dr. Norman Chevers quotes several cases of this kind. This mutilation is caused either to prevent identification, as in the case of a wounded thief decapitated by the other members of his gang; or else to throw suspicion upon innocent persons. There are many instances of the former. That given by Herodotus, of a thief caught in a trap whilst plundering the king's treasury, and who begged his brother, who accompanied him, to cut off his head, is probably the oldest on record. Similar cases have occurred in Bengal, and are quoted by Dr. Chevers, *ex. gra*: In August 1869, the papers reported a daring dacoity in the village of Hasalong in Lohardugga. The robbers were chased by the zemindar and a fight ensued, in which two of the gang were badly wounded. Their comrades, however, succeeded in cutting off and carrying away their heads, so as to prevent identification.

Regarding mutilation of dead bodies, in order to throw suspicion on innocent persons, there are also several recorded instances. "Ill-will having for some months existed between a ticcadar of Patna and his ryots, the latter resolved to bring him into trouble. With this view they murdered Chumma Gowalah, an unfortunate cripple, and then laid his death at the door of the ticcadar. Ten persons were tried, of whom two were hanged."—(*Chevers.*)

In the Nizamut Udalut Reports for Bengal, Vol. VI, 1856, a similar case is reported from Tirhoot. The body of a deaf and dumb beggar was found fearfully hacked and cut, leaning against the house of a person against whom the accused had a grudge. Four persons were convicted by the judge, but were acquitted by the higher court. In my copy of Dr. Chevers' book, I find the following MS. footnote with reference to this subject: "I remember in a case tried by the sessions court of Cuddapah (*circa* 69 or 70), where the defence was that deceased had been murdered to get the prisoners into trouble, the judge (Mr. Hutchins) disbelieved that any thing so unnatural could have taken place, and severely reprimanded prisoner's counsel for adopting this line of defence."

It is in my recollection that a similar case occurred in Trichinopoly about twenty years ago, but I am unable to find the record. In that case an old man induced his sons to kill him (telling them that he must anyway die soon), and place his body in such a place as to cast suspicion on a relative with whom the family was at enmity. This was done and the trick very nearly proved successful, the relative being put upon his trial and narrowly escaping conviction. He was, however, acquitted, and the guilty parties detected.

"Probably the most atrocious case of the kind on record is that of a woman in the Patna District, who poisoned *her own* little daughter, and having concealed her body on the premises of a neighbour with whom she was at enmity, accused him of having murdered her."—(*Chevers.*)

Again: "It is a well known practice in India where a death occurs suddenly from natural causes to a member of one or two rival houses, for his relatives to inflict various wounds upon the corpse and to place it in a spot, where it may be readily discovered, near their enemy's dwelling."—(*Ibid.*)

VII.—*Nature of wounds a test of whether the case is one of suicide or murder.*

The following case was tried at the April sessions of the Cuddapah court (1884). Hearing a noise in his neighbour's backyard, early one morning before dawn, the person hearing it went and awoke the inmates. On going to the backyard, the form of a person was seen leaving it, and on going a little further, a female servant of the house was found lying in a pool of blood with her throat cut. No weapon of any kind could be found near the body. The woman was sensible, but could not speak. On the prisoner, a servant of the same house, who slept in the backyard, being arrested and placed amongst others, she pointed him out as the person who had stabbed her. Prisoner's defence was, that the woman had asked him to elope with her, and, on his refusal, had cut her own throat. The woman was taken to the hospital and lived for several days. The wounds were described by the medical officer as being from right to left. There were two gashes, and in each the deepest part was to the right and the gash tailed off to the left. The woman was right-handed. *Held*, that this could not be a case of suicide, as a right-handed person would most improbably have used the left hand; would still more improbably have been able to inflict two gashes with the left hand, and if she had done so, some weapon must have been found near the body. Sentence: Death, which was confirmed by the High Court.

VIII.—*Cases where the real cause of death was different from the apparent one.*

In March 1867, a woman, *ætat* 73, was charged with causing the death of a pauper, by striking her on the cheek. The deceased became insensible and died in ten minutes. On inspection, it was found that death had been caused by the rupture of an aneurism of the aorta. The medical opinion was that the blow might have accelerated a fatal result of the disease.—(*Taylor.*)

In another case **(Reg. *v.* Champlonier, 1854,)** an old man passing on the road was struck on the forehead by a stone thrown by the prisoner. There was a contused wound and the nose bled profusely. The bleeding was arrested, and on the following day the man was considered out of danger. At a later period of the day, however, the deceased was seized with an apoplectic fit, from which he did not recover. The appearance of the brain was sufficient to account for death, but the medical man could not undertake to say that the injury by the stone had in any way produced these appearances. The prisoner was acquitted.—(*Ibid.*)

Dr. Chevers mentions many cases in which persons, who have first of all been killed, have afterwards been hung up so as to cause an impression that they had committed suicide; and a case only lately occurred in which the body of a man found hanging was, on dissection, proved to contain a large quantity of arsenic, thus rendering it probable that he had been poisoned before being hung up.

IX.—*Death after long periods.*

It is generally believed that wounds of the heart produce almost instantaneous death. Various causes, however, may exist which prevent such wounds from proving fatal for hours and days, and sometimes even for weeks.

Dr. Taylor mentions that out of twenty-nine instances of penetrating wounds of the heart, only two proved fatal within forty-eight hours. In the others death took place at the varying periods of from four to twenty-eight days.

Dr. Chevers quotes the case narrated by Mr. William White of Rangoon. "A soldier was wounded in the storming of the Great Pagoda on 14th April 1852. The ball entered a little above the anterior fold of the left axilla, taking an oblique direction to the cavity of the chest. At first he appeared to be doing well, and the wound closed. Subsequently his health declined with feverish symptoms and evidence of pulmonary disease. A few days before his death it was noticed that the action of the heart was weak but natural, its systole and diastole regular and equal. He died worn out and emaciated on the 24th June. On examination, the bullet was found in the left ventricle of the heart, in its most interior part, crossed and recrossed by the cordæ, tendinnæ and carneæ columnæ in every part.

A rather peculiar case occurred at Calicut in 1857, (Reports of Madras Foujdaree Udalut, Vol. VII). Deceased was assaulted by the prisoner armed with a toddy knife, and terrible gashes were inflicted upon the head, neck, &c. This was on 8th April. Deceased was removed to the hospital, and there he died on the 21st May; *not* of the wounds, *but of dysentery*. The apothecary deposed that "dysentery was the sole cause of death, but I am of opinion that he would have died from the number of wounds received and the necessary enfeebling of his constitution in consequence." The prisoner was convicted of wounding with intent to murder, and sentenced to imprisonment for life with hard labour.

X.—*Death caused under a false plea of private defence.*

This case was tried at Cuddapah in the July sessions of 1883.

The prisoner appears in the middle of the night to have raised an alarm that some one was breaking into one of the houses. He at once went to the house, and, seeing a person creeping out of a hole in the wall, he attacked him with a bill-hook and almost cut him to pieces. He alleged, in his defence, that he had done this because he considered the man to be a robber. He had at one time been employed as a watchman in the village, but at the time of the occurrence was no longer so employed. It was proved at the trial, that the prisoner and the deceased were two thieves. A dispute had occurred between them; the quarrel had been patched up, and the prisoner induced the deceased to join him in the very offence at which the crime occurred. When the deceased had got inside the house, the prisoner raised the alarm, and then, as the deceased crept out of the hole in the wall, at once attacked him in so savage a manner that death must have been instantaneous. Prisoner was found guilty of murder and sentenced to death; but, on appeal, this sentence was reduced by the High Court to transportation for life.

CHAPTER II.

ON RESPONSIBILITY FOR DEATH.

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AMONGST medical jurisprudents there exists considerable diversity of opinion as to what constitutes a mortal wound. As far as we in India are concerned, there seems to be little necessity for entering into the controversy, and probably the safest thing to do will be to call those wounds mortal which actually cause death. For the English jurist, the point would seem to be of interest only in order to decide whether or not an accused can be admitted to bail. For instance, in the case of the *King* v. *Salisbury* (1st Strange's Reports, p. 547), a woman, accused of having stabbed a gentleman, applied that that a physician of her own nomination should be present at the dressing of the wound in order to be able to satisfy the court that the patient was out of danger, in order that they might bail her. Here, in India, the main gist of murder and culpable homicide is the intention of the offender. If a wound causes death, and was inflicted under such circumstances, or by such a weapon, as was likely to cause death, the offence will be murder or culpable homicide. In England the law would seem to be different, and, according to Lord Hale, "if a man be wounded and the wound, although not in itself mortal, turn to gangrene or fever, this is homicide in the aggressor; for though the fever or gangrene be the immediate cause of death, yet the wound, being the cause of the gangrene or fever, is held the cause of death—*causa causati.*" Under this ruling the accused, in the Illustrative Case quoted in the last chapter, No. IX, would have been found guilty of homicide, since the dysentery of which the deceased died was said to have been brought on by the wounds. Lord

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Hale says "It is sufficient to constitute murder, that the party dies of the wound given by the prisoner, although the wound was not originally mortal, but became so in consequence of negligence or unskilful treatment." There are instances on record of persons who have died in consequence of the very slightest injuries: for instance, a girl struck her leg against a wheelbarrow, a slight wound was caused on the shin, but constitutional symptoms set in, and she died of the wound a few days afterwards. Had this injury been caused by another, he would, under the English law, as laid down by Lord Hale, have been guilty of homicide. Here, in India, he would not be found guilty of murder or culpable homicide. But if a man were to fire a pistol into a crowd, or, in striking at a man with a sword, were to inflict even a light skin wound, and the wound were afterwards to mortify and cause death, he would be liable for murder, because the act in itself was so imminently dangerous to human life that he would be held liable for all the consequences of the act. And here also Lord Hale's rule would apply, and if the wound caused death owing to the want of medical treatment, or even if it could be proved that the wound might not have proved mortal if treated better or differently, he would still be liable. "But," says Lord Hale, "it is otherwise where death arises not from the wound, but from unskilful applications or operations used for the purpose of curing it." This distinction, it will be observed, is a very nice one, and Dr. Taylor remarks, "In slight and unimportant wounds it might not be difficult to distinguish the effects resulting from bad treatment, from those connected with the wound, but there can be few cases of severe injury to the person, wherein a distinction of this nature could be safely made; and the probability is, that no conviction for murder would now take place, if the medical evidence showed that the injury was not originally mortal, but only became so by unskilful or improper treatment." (See Illustrative Case No. XI.) Several cases are given in illustration, of which we may quote the two following:—In the case of *MacEwan*, Perth, September, *circ.*

Responsibility of aggressor for consequences of an injury.

1830, the prisoner was indicted for the manslaughter of a boy, by striking him a blow on the shoulder, which dislocated the arm. Two days after the blow, an ignorant bonesetter was consulted, and, owing to his manipulations, inflammation took place, and the boy being of a scrofulous habit, this proved fatal.

In another case, (*Reg.* v. *Kingshott*—Lewis Summer Assizes, 1858), a man in a quarrel received a bite on his thumb. He went to a quack, who applied some irritating ointment, which led to severe inflammation, and this rendered amputation necessary, from the effects of which he died. There was evidence that the original injury was slight, and would probably have healed but for the improper applications. In both these cases the prisoners were acquitted. In this country in the former case the prisoner would certainly have been liable to punishment for causing grievous hurt, and probably for simple hurt in the latter case. Here, in India, it is frequently impossible for a native to get any medical assistance whatsoever, and there might occur many cases in which, owing to a slight wound not having been treated, inflammation and death might supervene. In all such cases the test would probably be, under what circumstances and with what kind of weapon was the injury caused ? The mere failure of the injured person to call in medical assistance, would not be sufficient to exonerate the accused; for, in the case of *Governor Wall*, the Lord Chief Baron, in charging the jury, observed that no man was authorized to place another in so perilous a predicament as to make the preservation of his life depend merely on his own prudence. The same has been ruled in another case, (*Bennett* v. *Gredley*, Exchequer Sittings, Hilary Term, 1854), where there was a suit for compensation by reason of injuries inflicted on a boy's arm. It was argued in defence that the state of the arm was partly owing to a former injury, but the Chief Baron remarked that a man was not bound to have his body in so sound and healthy a state as to warrant an unauthorized assault upon him. A man, therefore, who commits an unauthorized assault upon his fellow-man, must take the chance of the effects such an assault may produce. "So, if the person maltreated be an infant or an infirm old man, or one labouring under a mortal disease, it is notorious that a comparatively slight degree of violence will destroy life in these cases, and the prisoner would be properly held responsible. A wound which *accelerates* death, *causes* death, and may, therefore, render the aggressor responsible for murder or manslaughter according to the circumstances" (Taylor). According to Lord Hale, if a man has a disease which, in all likelihood, would terminate his life in a short time, *and another gives him a wound or hurt which hastens his death,* this is such a killing as constitutes murder. This point is of especial interest in India, where so many persons suffer under an enlarged spleen, which is liable to rupture on the infliction of a very slight blow. As stated above, the test would probably be the circumstances under which the blow, which caused the injury, was struck. It would probably be held that a kick, or a blow with a stick, is an act so imminently dangerous that the aggressor would be guilty of having caused the death, if death—say by the rupture of the spleen—actually did occur. A blow with the clenched fist might likewise be held to be dangerous in itself, but this could scarcely be the case in the event of a blow struck with the open hand. In connection with this, a very nice point would arise; supposing such a blow from a kick, or a stick, which would not, under ordinary circumstances, cause death, caused a rupture, say of the spleen, from which the person injured subsequently *recovered,* could the aggressor, who, in the event of death having ensued, might have been held liable for culpable homicide or murder, be held liable of *an attempt* to commit these offiences? It is, I think, doubtful whether any Court would so hold him liable.

Secondary causes of death.

A person who recovers from the immediate effects of a wound may die from fever, inflammation or its consequences, pyæmia, erysipelas, delirium tremens, tetanus or gangrene, or from an operation rendered necessary in the treatment of the wound. These are what may be called secondary causes of death, or secondary consequences of a wound (Taylor). It frequently happens that in the case of cut-throat, the patient dies from suffocation. In the Illustrative Case, No. VII, quoted in the last chapter, where a woman's throat was cut, she died about ten days afterwards of inflammation of the lungs, brought on by the wound. It may often become a point of considerable difficulty to decide upon the exact responsibility of a person, when the death depends only in an indirect manner upon the injury caused by him. In the case of death from injuries, therefore, however slight they may be, the accused should be invariably dealt with by the higher courts. This, however, is by no means always the case. I remember on one occasion (December 1870) when, as head assistant magistrate, I committed a man to the sessions court of Kurnool on a charge of having caused the death of his wife, by having in a quarrel struck her on the side with a cob of Indian corn, and thereby ruptured her spleen, it was remarked by the sessions judge that this was a case which the magistrate could have disposed of himself. The fact of death having occurred should be sufficient to remove a case of hurt, even although *primâ facie* it may seem to be one of simple hurt, from the jurisdiction of the magistrate to that of the sessions court. The responsibility of the aggressor is in cases of this kind a question which it is very difficult to decide, and "it is impossible to lay down general rules on a subject which is liable to vary in its relations in every case; but where a wound is not serious, and the secondary cause of death is evidently due to constitutional peculiarities from acquired habit of dissipation, the ends of justice are probably answered by an acquittal" (Taylor). In cases of this kind, however, the public prosecutor should be careful to add another charge, so that if the accused should be acquitted on the more serious charge of homicide, he may still be punished for the act which caused the injury.

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The law in England and in India seems to differ in this respect; that, whereas in the former country the aggressor is held responsible for the death which may be the result of even a slight injury, he would not be found guilty of more than manslaughter. This would be a point for the jury to decide, and it would be for the judge, in awarding the punishment, to take into consideration the circumstances under which the injury was inflicted, and the intention of the prisoner. Hence a person may be found guilty of manslaughter, and an almost nominal punishment be inflicted. In India, however, the description of weapon used, may, according to the definition of the Penal Code, make the offence necessarily one of murder in which the judge has no option to pass any other sentence than one of death, or transportation for life. Hence the practice spoken of in the last chapter, and illustrated by the case from Cuddapah, where a man beat a woman to death with a rice-poundor, in which, owing to the circumstances, under which the injury, which caused death, was inflicted, the judge convicted of murder, but at the same time recommended a mitigation of the sentence, a course which the High Court held to be a proper one to adopt.

Tetanus.

This disease is liable to occur as a secondary consequence of almost any kind of wound. It may not occur in cases where wounds of the severest description have been inflicted; and, on the other hand, it may supervene when the wound is of the smallest and most insignificant nature. It is specially liable to occur in the case of lacerated or contused wounds, and has occurred as a result of even slight bruises. Dr. Taylor quotes the following cases :—A man slipped and fell flat on his back. He was stunned, but was able to walk home. Next day he was attacked with tetanus and died in seventy hours. It has occurred as the result of a blow on the nose, and it sometimes occurs without any apparent cause whatsoever. Dr. Watson met with an instance, in which tetanus appeared in a severe form in a man who had received no wound, but who had been simply exposed to cold and wet.

It follows, therefore, that a medical witness should be

Baynes says that natives of this country are not generally so liable to suffer from the secondary causes resulting from injuries as are people in Europe; *ex. gra.* tetanus, erysipelas, &c.

exceedingly cautious before venturing an opinion as to whether tetanus has, or has not, been caused by a wound. The body should be carefully searched in order to ascertain whether there is any other trace of injury to which the tetanus may be due. Thus, in the case of a boy who was attacked by symptoms of tetanus, soon after receiving a blow and a kick from another boy, and who ultimately died of this disease, it was found, on an examination of the body, that there was a recent scar on the ball of the great toe, and it was ascertained that six days previously he had driven a rusty nail into his foot which had caused suppuration; and there could be no doubt that this, and not the slight blow struck, were the cause of tetanus. Dr. Taylor says: "It is scarcely possible to distinguish, by the symptoms, tetanus from wounds (traumatic), from that which occurs spontaneously as a result of natural causes (idiopathic)."

Erysipelas.

This disease, like tetanus, may be the result of slight injuries. Some constitutions are more prone to it than others. Erysipelas frequently occurs after wounds on the head, burns and scalds. Taylor says: "The medical facts, that the person assaulted has never recovered from the effects of the violence, and that the inflammation set up has suddenly assumed an erysipelatous character, are sufficient to establish this connection." With reference to this disease, however, it should be borne in mind, that, unlike tetanus, the symptoms of erysipelas will show themselves in the injured parts, and it will, therefore, be easier to decide whether or not the disease has been caused by the injury.

Delirium tremens.

In the case of persons of intemperate habits this disease is often brought on by even slight injuries. In illustration of this, Taylor quotes *Reg.* v. *Heywood,* C. C. C., October 1846. Deceased was assaulted without any serious consequences. Delirium tremens came on and he died in a few days. The medical opinion was that death was attributable to a shock of the nervous system, causing delirium tremens; and he accounted for that shock by the attack made on the deceased and the blows he had received. In cross-examination, he attributed the delirium tremens to both the blows and excitement. The prisoner was acquitted. This verdict would scarcely seem to be consistent with the Chief Baron's ruling quoted *ante*, that a man is not bound to have his body in so sound a state of health as to warrant an unjustifiable assault. If the deceased had not excited himself previous to the assault, if the assault was an unjustifiable one, and the excitement was in consequence of it, it would seem as if the accused should have been held responsible.

Death from surgical operations.

This point involves a question of great importance, *viz.*, the responsibility of a medical man, who, in the treatment of a person injured by violence, conducts an operation from the effects of which the patient dies. The question is one of such vital interest to practitioners, that it is not to be wondered at that they treat it at some length. For all practical purposes, however, it would seem that the two following questions only should be answered: (1) Was, in the opinion of the medical attendant, the operation necessary for the preservation of life? (2) Was the operation properly conducted according to the best of the practitioner's ability and with due care and attention? If these two questions are answered in the affirmative, in the event of death resulting from the operation, death must be held to have been caused by the injury which rendered the operation necessary. The operation must, however, have been necessary in order to save life. If an operation were performed merely to prevent the signs of disfigurement caused by an injury, and death resulted, the person who caused the injury could not be held responsible. The same rule would apply where the operation had been conducted, not for the purpose of preserving life, but of preserving the use of some limb or member: for instance, A causes to B injury, in consequence of which, it appears to the medical attendant, that unless an operation is performed, permanent loss of sight will follow. Danger to life is not apprehended, but merely to the organ of sight. An operation is performed, in consequence of which B dies. In this case A could not be held responsible for B's death. Even if it should be afterwards proved that life might possibly have been saved without an operation, this would not be sufficient to make the operator liable, if, after due care and the exercise of such science and knowledge as he was possessed of, he was convinced that an operation was necessary. Of course, if it could be shown that, in conducting the operation, there was gross negligence, as for instance, owing to an artery not having been tied up, the patient died from loss of blood, or, as in a case quoted by Caspar, where a portion of the bowel was cut off in mistake for the umbilical cord, and death ensued, it would be necessary to hold that the operation was the cause of death, and not the original injury. On this point, see Illustrative Cases, Nos. XVI to XVIII.

ILLUSTRATIVE CASES.

(Part I, Chapter II.)

XI.—*Accused held liable for death following an operation based on a mistaken diagnosis.*

Reg. *v.* **Pym,** Hant's Lent Assizes, 1846.—In this case a Lieutenant Seton had been shot in a duel. A tumour formed in the course of the pistol-shot received by the deceased at the lower part of the abdomen; and this was supposed, by the late Mr. Liston and two other surgeons, to be an aneurismal enlargement from a wound in, or injury on, the femoral artery, for which it was considered necessary to tie the external iliac artery. The patient died from peritoneal inflammation following this serious operation, and, on inspection, it was found that the tumour (the supposed aneurism) was formed by a mass of coagulated blood, poured out, not from the femoral artery, but from one of its superficial and anomalous branches. Counsel for the prisoners proposed to cross-examine the medical witnesses, in order to show that the wound was not dangerous to life, and the operation not absolutely necessary. Erle, J., said: "I presume you propose to call counter-evidence, and impeach the propriety of the operation; but I am clearly of opinion, that if a dangerous wound is given, and the best (available?) advice is taken, and under that advice an operation is performed, which is the immediate cause of death, the party giving the wound is criminally responsible." Counsel replied, that he was prepared to show that no operation at all was required, or at all events an easier and much less dangerous one might and ought to have been adopted. He submitted that a person is criminally responsible where the death is caused by consequences which are not physically the consequences of the wound, but can only be connected with the first wound by moral reasonings. Erle, J.: "I am clearly of opinion, and so is my brother Rolfe, that where a wound is given, which, in the opinion of competent medical advisers, is dangerous, and the treatment which they *bonâ fide* adopt is the immediate cause of death, the party who inflicted the wound is criminally responsible, and of course those who aided and abetted him." The point was reserved, but as the prisoners were acquitted on other grounds, was not referred to the judges (Taylor). Dr. Taylor goes on to remark, with reference to this case, "No operation would have been required but for the injury, and the prisoner ought not to escape on account of want of skill in a surgeon, or of a mistake by a skilful operator."

XII.—*Cases where, in India, the accused has not been held responsible for homicide when death occurred as the secondary cause of the injury.*

Reg. *v.* **Bysagoo Noshyo,** Cal. W. R., Vol. VIII, September 1867.—Accused quarrelled with his wife and gave her a kick, which ruptured her spleen. He repented immediately and was found with the woman in his arms helping her. Acquitted under Sections 320 and 322 of the Penal Code, but found guilty under Sections 319 and 321. Sentence: One year's rigorous imprisonment.

XIII.—**Reg.** *v.* **Robert Bruce,** an Artilleryman.—Accused was tried for 'causing hurt' by kicking a boy who was suffering from diseased spleen. Death was the result of the kick. The judge held that the prisoner had no intention of causing death, but, considering the dangerous consequences of such an act, especially when inflicted on a native of this country, sentenced him to six months' rigorous imprisonment.—(*Calcutta Criminal Court, June* 1868.)

Taking into consideration the rulings given in the text, there can be little doubt, that had these trials taken place in England, the accused would, in some instances, have been found guilty of murder.

According to Lord Hale's ruling, quoted in the text, it would seem that an injury of this kind, which was the direct cause of death, would be sufficient to constitute murder. "If a man," says Lord Hale, "has a disease which, in all likelihood, would terminate his life in a short time, and another gives him such a blow as hastens his death, *this is such a killing as constitutes murder.*" Disease of the spleen, however, is not even a disease which need necessarily prove fatal. In this country persons may live on without feeling any inconvenience from a diseased spleen; it is only when it is ruptured that it proves fatal.

XIV.—*Tetanus, case of, held not to be result of injury.*

C. C. C., July 1859.—A potman, said to be of intemperate habits, was struck on the left cheek with a quart pot. There was a contusion, but no injury to the skin. For thirteen days he suffered no ill effects, when erysipelas commenced. On the same day he was attacked with delirium tremens. On the sixteenth day erysipelas became general. Death took place on the seventeenth day. At the trial the medical witness stated, that it was not probable that erysipelas could supervene upon a contused wound thirteen days after a blow, and he expressed his opinion, that in this case the erysipelas could not be attributed to the blow. The accused was acquitted.—(*Taylor.*)

XV.—*Erysipelas, the result of an ulcer and not of a wound.*

In 1822, a gamekeeper was charged with the murder of a poacher, whom he shot in the left arm, which had to be amputated. The man died of erysipelas in the right leg, and the question was, whether the erysipelas could have been caused by the gun-shot wound. It appeared that deceased had an ulcer in the leg attacked; had been for several days exposed; that erysipelas was prevalent in the infirmary, and deceased had been put in a bed occupied by a patient suffering under this disease. Prisoner was acquitted.—(*Taylor.*)

XVI.—*Death by surgical operations.*

The case of **Kelly** (Dub. Commissioner's Court, November 1871) is a remarkable one, as the verdict is utterly at variance with the law as laid down by the various English judges. The deceased was a police constable, who had received a pistol-shot in the back of the neck and died four days afterwards. The medical attendant deemed it necessary to enlarge the wound in order to extract the ball. During the operation nothing serious occurred to cause death. The bullet itself had "fractured and splintered the atlas, wounding and crushing the soft parts of the neck, and leading to the formation of an abscess." It was considered absolutely necessary to extract the bullet, and had this not been done, there can be no doubt that the death would have been attributed to neglect to extract it. The prisoner was clearly identified, but in spite of this the prisoner was acquitted on the ground that the operation may have been the cause of death. Taylor remarks, "that the failure of justice in this case was chiefly owing to the jury having been allowed to form their opinion on the surgical treatment pursued." They should have been called upon simply to state whether the prisoner was the man who inflicted the wound, and the judge should then have applied the law as to responsibility for a surgical operation.

XVII.—*Medical responsibility, mala praxis.*

In **Reg. v. Dickinson** (Stafford Lent Assizes, 1846) it was ruled, that where there are different modes of treatment, regarding which men of learning are divided, no man can be held to be "grossly ignorant" if he adopts a course sanctioned by some eminent men, but opposed by others.—(*Taylor.*)

XVIII.—*Ordinary skill, and not eminent skill, to be expected.*

In **Gibbs v. Tunaley** (Norfolk Lent Assizes, 1846) it was ruled, that the jury were not to expect the same amount of eminent skill in a country practitioner, as is to be met with in large towns; but they had a right to expect from him the usual and ordinary amount of skill, care and attention, which it was only reasonable to suppose he would possess; and if, in the discharge of his duty, he applied his professional skill and knowledge to the best of his ability, then, however unfortunate the termination of the case, he was not to be held responsible. The case was one for damages, but this ruling would probably apply to the treatment of a wound; and if death followed, even if the treatment could be shown to be not as good as might have been obtained elsewhere, the person who caused the wound, and not the medical man, would be held responsible for the death.

CHAPTER III.

CIRCUMSTANTIAL EVIDENCE.

The evidence treated of in this chapter is what in England is generally to be expected from the medical man called in after the finding of the body or the wounded person. In this country the body has generally to be sent to the medical officer, so that the circumstantial evidence, which is often of such importance in the detection of crime, must, for the most part, be gathered by the police and village authorities on the spot.

The dress.

The dress which the deceased wore at the time of death should be most carefully examined, in order to see whether it presents any marks corresponding with the injuries. In this country it often happens that the deceased has worn little or no clothing, but as regards women this is not the case. In the case of wounds caused by a cutting instrument, if there is an incised wound on the body, it will be only natural to expect to find a corresponding incision on the clothing. In the case of blows from a blunt weapon causing bruises or fractures, this rule does not apply. A blow has caused fracture of the skull without leaving any trace on the silk cap which was worn at the time. In 1853, a woman was accidentally knocked down in the street and fell on the back of her head. She was stunned at first, but walked home. Next morning she was found dead in bed. On examination of the skull, two indentations of the parietal bone were found, a clot of blood, and below the clot a fracture of the bone. It was considered at first that the injury was too great to have been caused by such a fall, but on examination of the bonnet which she wore at the time of the accident, two indentations, containing dust and dirt, and corresponding with the indentations on the skull, were found on it. A young man, who wished to create an impression that he had been attacked by robbers, inflicted some superficial wounds on himself, and afterwards made, as he thought, corresponding incisions in his clothes. The imposture was detected owing to his having stabbed through a fold, which he made for the purpose, in his shirt. Had he been wearing the shirt at the time, a stab passing through a fold would make three incisions, two through the fold and one through the rest of the shirt. In this case there were only two.

Murder or suicide.

Much valuable evidence can be gained from a careful examination of the body which will tend to throw light upon this question. The three points to be looked to as regards the wound are (1) its situation, (2) its nature and extent, and (3) its direction.

Situation of wounds.

As a general rule, wounds inflicted by suicides are to be found in the front or lateral parts of the body. This, however, is no proof one way or the other, since an assassin might have attacked the deceased from the front. Even death caused by the discharge of a pistol into the mouth, need not necessarily be the act of a suicide, for a calculating murderer might purposely resort to this method of destroying a person in order to conceal the crime. On the other hand, Orfila observes, that even wounds situated on the back of the body need not necessarily have been inflicted by another person. A wound traversing the body from the back to the front, however, is scarcely likely to have been the act of a suicide, although it might be caused by falling backwards on a sword or knife fixed in the ground. Take, for instance, the tricks played by jugglers in this country in which they lean backwards over a sword fixed in the ground and pick up straws with their eyelids. In practising this trick, an accident might well occur. In a case of this kind some light might be thrown upon the matter by the position of the body when found, whether on the back or on the face, but even this would not be decisive, because the wound may not have caused instantaneous death. Suicides rarely cause death by blows, though cases have occurred in which suicides attempted to dash out their brains by striking their heads against a wall. Stabs are generally presumptive of homicide, but not necessarily proof of it, for suicides have killed themselves by stabs in the throat as well as by stabs in the abdomen.

Nature and extent of a wound.

A farmer was found dead in the road with his throat cut, *i.e.*, the knife had been inserted behind the ear and the throat had been cut outwards, as butchers kill sheep. The nature of the wound led to suspicion falling on a butcher, who was afterwards found to have committed the murder. Persons labouring under insanity sometimes inflict upon themselves the most extraordinary injuries. Cases have occurred in which persons have torn away large portions of the abdomen, and there is one case of a lunatic who inflicted no less than thirty wounds on the back part of his skull with a cleaver. He lived long enough to admit that he had caused the injuries himself. As a general rule, the existence of a number of wounds is presumptive of homicide, and especially so if several of them in different parts of the body are of such a character that more than one was likely to have caused instant death. Thus, a man with a cut throat, some of the large vessels of the neck being severed and a wound in the heart, could scarcely have cut his throat after the wound in the heart, or *vice versâ*. Wounds in the throat inflicted by suicides are commonly in the upper part. Generally speaking, all the vessels of the neck to the spine could scarcely be severed by a suicide, but there is nevertheless one case on record in which a suicide "divided all the muscles of the neck, the windpipe and the gullet, had opened the jugular veins and both carotid arteries, and had even grazed the anterior ligaments of the spine" (Taylor).

Direction of a wound.

In cases of suicide, the direction of the wound is generally from left to right, (with left-handed persons it will be the reverse), and from above downwards. A wound from below upwards, or, in the case of a right-handed person, from right to left, is presumptive of homicide, but not proof thereof. A right-handed murderer standing opposite his victim would probably inflict wounds having a direction exactly contrary to that which they would have if self-inflicted by a right-handed man. But if the murderer were standing behind his victim, it stands to reason that he could inflict a wound exactly similar in direction to one the victim himself could cause. As a general rule, it may be said that there is no wound which a suicide inflicts which could not be caused by a murderer, but there may be some wounds, such as those on the back of the body, and those with an upward tendency, which, it is improbable, could be self-inflicted. Improbable, but not, except in very rare cases, impossible.*

It must be remembered, that in the case of suicide the deceased may purposely have committed the act under such circumstances as to cause suspicion of murder. In England this may be done in order that his family may get the benefit of an insurance policy, and in this country in order to throw suspicion upon a person with whom deceased was at enmity. Regarding this point several interesting cases will be found at the end of the chapter.

Circumstances to be noted at the time of finding the body.

The following points are of the greatest importance, and should be carefully noted by those who conduct the first inspection of the body:—(1) Is the position of the body that which a suicide could have assumed? (2) Is the distance of the weapon from the body such as to render it improbable that it could have been placed there by the deceased? Before noting these points careful enquiry should be made as to whether the body has been since moved or the dress in any way disarranged. The probabilities are that, in this country, unless the evidence on the first of these points was much more satisfactory than the generality of native evidence, not much importance could be attached to it. As regards the latter point, however, it is often possible to get much important evidence. If a body is found with a mortal wound, such as throat cut, a stab in the heart, or a fracture of the skull, and the weapon is found at a considerable distance, it is improbable that the act could have been one of suicide. If a weapon is found in the hand of the deceased, such as a knife or a pistol, it is most important to notice whether the weapon is grasped firmly or loosely. If the former, the case is probably one of suicide; if the latter, of homicide, and the weapon has been subsequently placed in the hand in order to raise a suspicion that the wound was self-inflicted. At the time of death there occurs what is called the cadaveric spasm, in which the muscles acquire a sudden rigidity. This is quite different from the *rigor mortis*, which does not set in until a considerable time after death. If, at the time of death, a person was holding a weapon in his hand, the effect of this cadaveric spasm would be that the weapon would be tightly grasped and would remain so for several hours. If, however, a murderer placed the weapon in the hand, even though immediately after death, he could only do so by removing the rigidity caused by the spasm, and then even if the fingers were closed over the weapon, this rigidity could not be restored, and the fingers would be limp and pliable.

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* I find a curious contradiction as regards the direction of wounds between Taylor and Caspar. The former says: In suicidal wounds which affect the throat, the direction of the cut is obliquely from above downwards commonly from *left* to *right;* in suicidal stabs and punctured wounds, the direction is commonly from *right* to *left*, and *from above downwards* (3rd ed., p. 514). *Caspar*, on the other hand, (Vol. I, p. 284, Eng. ed.) says: "The direction of the wound may be such as to exclude the possibility of suicide; for instance, should it tend from behind forwards, or *from above downwards.*"

Marks of blood.

Any marks of blood on the body, the clothing and in the neighbourhood of the body, should be carefully noted. In the case of a person found dead with throat cut, the bloody marks of a left hand was found on the deceased's left arm, thus showing conclusively that the case was one of murder and not of suicide. The body of a woman was found dead at the bottom of a flight of stairs with a fracture of the skull. The accused, deceased's husband, said that she had accidentally fallen downstairs, and the fracture was of such a nature, that it was probably caused by the fall. But there was also an incised wound in the temporal artery of the body, which, it was improbable, had also been caused in the fall, and at the top of the stairs were found several arterial spirts of blood on the wall, thus showing that the wound must have been caused at the top of the stairs, and the woman had then either fallen or had been pushed down.

(*Reg.* v. *Spicer,* quoted by Taylor.) Notice should also be taken of the manner in which the blood has flowed from the wounds. If the blood has poured downwards over the body, the wound must have been inflicted when the deceased was in an upright position; if, however, the deceased was wounded when lying down, there may be little or no blood on the body since it may have flowed directly on the ground. Wounds on the hands should be carefully looked for, as the presence of wounds of this kind is strongly presumptive that they have been caused whilst the deceased was in the act of defending himself, or in trying to ward off a blow. As regards this point, and others of a circumstantial nature, see the interesting case of *Reg.* v. *Gardner,* at the end of this chapter. In the event of a serious wound being found, such as would cause great loss of blood, with, however, but little trace of blood near the corpse, the death has most probably been caused by homicide, and the wound inflicted after death, which had been caused by some other means, such as strangulation, suffocation, &c. In examinations of this kind, however, great care should be taken that none of the persons present cause any of the marks which are subsequently found. For instance, a person might accidentally step in a pool of blood, and afterwards leave a bloody footprint on the floor, which might possibly be taken to be that of the murderer. In the matter of footprints, very great care should be taken in the measurement. This should be done with the utmost nicety, and a careful record of the measurement should be kept. In the event of a bloody footprint near the body, corresponding with that of an accused, being found, a good plan is to obtain a separate footprint of the accused, and then to compare it with the one found; and, if possible, to produce both at the trial. In the same way, when a footprint is found in wet mud, the foot of the suspected party should not be placed in the footprint, but he should be made to make another mark, and the two should then be compared. If the accused's foot is placed in the footprint found in wet mud, it is clear that if the new foot is a little larger than the print, the print itself might easily assume the form and shape of the new foot. In the case of footprints of this kind, it would probably not be impossible to dig up the mud, and after it has got hardened in the sun, to send it, together with the imprint of the prisoner's foot, to the court which tries the case.

It by no means follows that when a murder has been committed, marks of blood must necessarily be found on the clothes or the person of the murderer. If the wound has been inflicted in front by an assassin standing behind, it is of course obvious that no blood would be found on his clothes. Still the fact of the prisoner's clothes not being marked with blood, has been on more than one occasion urged as a proof of his innocence. This was one of the pleas on behalf of Müller, who murdered Mr. Briggs, by first of all violently assaulting him with a life-preserver, and then throwing him from the railway carriage. It will of course be of importance if it can be shown that the accused washed himself or his clothes soon after the time of the murder. In the event of stains being found on a cloth or an instrument, it should not at once be concluded that they are marks of blood; they may be iron rust, paint or fruit stains, or, in this country, betel juice. The clothes or weapon should be most carefully packed and sent to the hospital for chemical examination. It seems absurd, but it is by no means unnecessary, to remind sub-magistrates and police officers that it is not possible for the chemical examiner or medical officer to say more than that the signs are those of mammalian blood. There is at present no method known of distinguishing between human blood and that of animals. Marks of injury on the suspected party should be carefully looked for, and, if found, noted at the time of arrest. A remarkable case in illustration of this point occurred in 1834, when the victim of a robbery was able to catch one of the robber's fingers between his teeth and to bite off the end between the nail and the joint. The piece of finger was preserved in spirits, and led to the conviction of the robber.

ILLUSTRATIVE CASES.

(Part I, Chapter III.)

XIX.—*Situation of wounds.*

In **Reg.** *v.* **Wallis,** C. C. C., 1839, a man was charged with killing his wife. The body was found on the ground by the side of the bed. There were distinct and severe bruises found on the back of the head and on the temples. In defence, it was urged that the injuries had been caused by the woman tumbling out of bed. This might have accounted for the injuries either at the back of the head or on the temples, but not for both.

XX.—*Suicide or Murder.*

In 1837 the body of a woman was found with the throat cut. The deceased, when found, was lying on her back, and the razor, with which the wound was inflicted, was found under the left shoulder. On inquiry it was ascertained, that when first seen she was lying on her face and the body had been turned round on the back. Blood had evidently run down the fore part of her person, rendering it probable that she had been wounded whilst in an erect position. The wound extended from the *right* side of the chin to within an inch of the left collar-bone. It had divided the windpipe, the gullet, all the muscles of that side and the fore part of the neck, the carotid artery, the jugular vein, and the muscles of the fore part of the neck. The incision was double—one superficial, close under the chin; and the other, a deeper one, appeared to be continued from this. The cut was four and a half inches long, and two and a half deep. It was held, and Taylor says correctly, that the wound was inflicted by another, and not by deceased. Deceased was right-handed, which would have added to the difficulty supposing the wound to have been suicidal.

XXI.—In 1860 a somewhat similar case occurred. The wound commenced on the left side and continued to an inch and a half from the centre of the chin. Almost all the organs on that side were more or less affected. In the left hand of the deceased was found a common dinner knife, *loosely held* in a reversed position with the back towards the throat. There were three incised wounds on the back of the left hand. The deceased was right-handed. It was held to be homicide. A fellow-servant was suspected, tried and convicted, on his own confession. It is remarkable in this case that the clothes he had on at the time of the murder showed no traces of blood except a few small spots on the shirt.—(*Taylor.*)

XXII.—**Reg.** *v.* **Gardner,** C. C. C., 1862.—This case presents so many points of interest and importance, that a full account of it is necessary. In it is to be found almost every point referred to in this chapter. The whole case turned upon the medical evidence. I was present when the case was tried, and the notes of it formed a portion of the examination I had to pass for the C. S. Test. Gardner was a chimney sweep, and lived in a small house, of which the other inmates were his wife and a young woman named Humbler. It was alleged at the trial that the prisoner and Humbler were on terms of intimacy, but this was not proved. The wife was found dead in her bedroom about 8 A.M. with her throat cut. It was either a case of suicide or else of murder. If it was murder, it could only have been committed by her husband, or by the woman Humbler, who were the only two other residents. It was proved that between 4. A.M. the husband usually went out to work, and did not return until after the body was found dead. When the medical man was called in, Mr. Sequeira, the body was lying in the bed-room and the *rigor mortis* had already set in as far as the upper limbs were concerned. The whole body was cold except the abdomen, and as the woman at the time of death was pregnant, this accounted for the warmth in that part of the body. Mr. Sequeira held, that when he saw the body at 8 A.M., it must have been dead at least four hours. In this opinion he was confirmed by another medical witness. The woman was found lying on the floor, partly under a bed. There was a severe wound in the throat, involving the superior thyroidal artery and other vessels. From this about two pints of blood had flowed on each side of the neck on to the floor. There was no blood anywhere else on the body. It was therefore clear that the wound in the throat must have been caused when the body was in a recumbent position. Death had resulted from suffocation, owing to the blood having flowed into the windpipe. In the right hand there was a common table knife loosely held, the back of the blade towards the palm of the hand and the point of the knife pointing upwards. There were four wounds on the inside of one hand and six wounds on the inside of the other. The wounds were across the fingers as if they had grasped the blade of a knife. The medical evidence was to the effect that the wound could not have been caused with the right hand. It was therefore clear that the woman had been murdered. The only two other inmates of the house were her husband, who had left at 4 o'clock, and the woman Humbler. The question was, which of these two could have committed the crime. It was urged in the defence of Gardner, that the woman had been killed after 4 A.M., the time when he left the house. If that had been true, the woman Humbler must have murdered her. The medical evidence was, however, conclusive that at 8 A.M., when found, the body must have been dead more than four hours, because the *rigor mortis* had already set in, and it is clearly proved, that in cases of asphyxia this rigidity does not commence until after six hours. This brought the time of death to about 2 A.M., when the only person in the room with the deceased was her husband Gardner. When the body was found, the room of the woman Humbler was searched, but nothing was found of a suspicious nature. Three days afterwards, however, the man Gardner pointed out some blood, which had evidently been lately smeared. It was sworn that this blood had not been there at the time of the first search. The woman was acquitted, but Gardner was convicted, the capital sentence being reduced to transportation for life. It will be noticed that the whole of the evidence in this case was circumstantial, and it was entirely due to the great care which Mr. Sequeira had taken in noting every circumstance at the time he was called in, that this crime was detected. This was one of the first criminal cases I heard tried, but I have never forgotten the calm possessed way in which the medical evidence was given.

XXIII.—*Self-inflicted wounds.*

The case of **Bolam** (Newcastle, 1839) is a leading one on this point. The prisoner was found lying in an apartment which had been set on fire, and near him was the body of the deceased who had evidently been killed with violence, the skull having been extensively fractured by a poker lying near. The prisoner, when found, was either insensible or pretended to be so. He said that he had been suddenly attacked by a man and knocked down by a blow on the right temple. He then felt a knife at his throat. His hands were not cut. He said he received other blows and then became insensible. There was a small wound on the left side of the neck. This wound had merely penetrated the true skin, and there was only a very small effusion of blood from it. There were many cuts in the coat, waistcoat and shirt, but no corresponding cuts or stabs in the body. The medical evidence was to the effect that the wound was self-inflicted, and on this evidence, in the absence of any proved motive for the crime, the prisoner was convicted.

XXIV.—Dr. Chevers quotes several cases of self-inflicted wounds. The following may serve as an example. *Niz. Udalut,* N. W. P., 25th February 1853:—Three native women and two children were found lying dead in a heap with their throats cut. The husband of one of the females gave the alarm, stating that the crime had been committed by dacoits, who had also wounded and bound him. The wounds on this man were very slight. He said he had been cut at with swords, but the only wounds found were two small *parallel* ones on the inside of the left thigh. One was scarcely more than a scratch, and the other had only just penetrated the true skin. He had clearly, first of all, inflicted the scratch, and then seeing that this would not be enough, inflicted a little deeper wound in the same place. The man was convicted. Dr. Hutchison says that a made-up sword or knife wound can always be recognized by a tailing, owing to the weapon being drawn across the skin. Except in the case of cut-throat, a wound caused by a blow will not show these signs, and will be deeper than a wound caused by drawing the weapon.

XXV.—Mr. Perceval, who had been a police superintendent, stated, that when he was connected with the police in Bombay, there were two or three gangs in that city who cut and wounded each other for purposes of false accusation and extortion. They used to cut one another's necks and arms by turns, as the lot fell, and accuse some rich passer-by of having done it. The wounded rascal would call out "murder," and his companions would follow and point out to the police the abode of the alleged culprit, the others declaring that they had witnessed the offence. Several respectable persons were thus disgraced and ruined. At last it fell to the lot of a youthful member of one of these gangs to have his neck cut. The person appointed to cut him was a drunken barber, who, instead of making a slight cut, inflicted a mortal wound. The gang fled, abandoning the youth, whose dying confession led to their arrest.—(*Chevers*, 358.)

XXVI.—Devergie, quoted by Dr. Beck, tells the following story:—As Napoleon was one evening in the park of St. Cloud, a young man rushed towards him with the cry, "Assassins! Save the First Consul!" He fell near the group which surrounded Napoleon, and, on examination, two wounds were discovered, from which blood flowed. He said that he had been studying in the park, when he overheard concealed conspirators planning the favourable moment for an attack, and, on being discovered, was thus wounded.

The gates of the park were closed, but no conspirators could be found. During many examinations he persisted in this story, and it was only at the end of fifteen years that he confessed that he had inflicted the wounds with his own hands.

XXVII.—*Cadaveric Spasm.*

An interesting case of this kind occurred in Bordeaux. A father and son, after dining heartily together, went to the room in which both their beds were. The son lay down on his bed and went to sleep. He said afterwards that he was roused by the sound of a pistol. His father was then found sitting by his bed, with one arm on the bolster, the other was resting on the inside of the leg and held a discharged pistol. The brains had been blown out. Suspicion at first fell on the son, because the hand still grasped the pistol, and in experiments made by lifting the arm to the head and then allowing it to drop to the position in which it was found, the pistol dropped out of the hand. This very fact, however, established the son's innocence. In the experiments tried after death, the rigidity produced by the cadaveric spasm had been destroyed, and therefore the weight of the pistol caused it to fall from the hand, but when death occurred the cadaveric spasm would have the effect of suddenly tightening the muscles of the fingers, and thus preventing the pistol from falling. It therefore followed that the deceased, when death occurred, must have been holding the pistol in his hand, and it could not have been placed there after death.

CHAPTER IV.

PROGRESS OF DECOMPOSITION AND INFERENCE REGARDING THE TIME OF DEATH.

Decomposition

As WILL be seen from the case of *Gardner*, quoted in the last chapter, the question of how long a body has been dead, may be of the utmost importance. Upon the correct answer to the question, the life or death of the accused may depend. Before decomposition sets in, a dead body has to go through certain stages. There is the cadaveric spasm at the time of death; then follows the gradual cooling of the body; then the *rigor mortis*, and then decomposition sets in. Decomposition almost always commences with certain portions of the body, and others again only commence to decompose after every other portion has been attacked. Decomposition depends, to a great extent, upon the heat, and therefore the rules laid down in Europe, regarding the time when the several stages occur, will not correctly apply to this country, where decomposition sets in earlier. But in this country, as in Europe, the same successive stages have to be gone through before the last stage of decomposition is reached, and the medical witness can therefore generally tell the probable period during which a body has been dead within twenty-four hours after death has occurred.

Taylor says, that in one hundred cases observed by Wilks and himself, there was not an instance in which the body had cooled and rigidity had set in in four hours. It is rare that a body cools in so short a time as six hours, and in cases of asphyxia, as much as eight hours is generally required for this process. Brown-Séguard states, that in the bodies of healthy persons, decapitated or asphyxiated, cadaveric rigidity did not appear sooner than ten or twelve hours after death. A remarkable instance of the correctness with which such inferences may be made, occurred in the case of *Jessie McPherson* (Glasgow, 1862)—*Reg.* v. *McLachlan.* The body was first seen by Dr. Macleod on the night of the 17th July, *i.e.*, in midsummer, when the mean temperature of the air was 50° F. "The *rigor mortis* was present in all the articulations, but it was then departing. The body was perfectly cold, even on the abdomen and at the flexures of the joints. There were no signs of decomposition and the temperature was unusually cool. By 10 A.M. on the next day, the *rigor mortis* had disappeared from all the joints, except the knees and the ankles. Death had resulted from violence and from profuse hæmorrhage. The victim was free from disease. *Rigor mortis* sets in generally from ten hours to three days after death; and when death has been sudden, and is due to violence, it sets in more slowly, and Macleod therefore considered that in this case at least forty-eight hours must have elapsed from the time of death until the rigidity set in. But when the *rigor mortis* sets in slowly, it lasts all the longer, and *vice versâ,* the average period of disappearance being from twenty-four to thirty-six hours. He therefore considered, that in this case the rigidity must have lasted thirty hours, and, putting these figures together, forty-eight and thirty, he arrived at the conclusion that about three days had elapsed since death. The evidence subsequently recorded proved, as nearly as could be, that *this was the time which had passed* between death and the examination of the body" (Taylor, 3 ed., p. 85).

Case of *Jessie McPherson.*

Taylor's four stages as adapted to this country.

Taylor gives four stages through which a dead body passes, with the average duration of each. The periods given have been tested with the experience gained in this country, and they are therefore now given with such modifications as have been considered necessary:—

First Period.—"This is characterized by the warmth of the body being more or less preserved, and by a general or partial relaxation of the voluntary muscles." During this period the muscles are capable of contracting when stimulated. After considering the various circumstances, such as temperature, clothing and disease, which may have retarded or accelerated the cooling of the body, it may be inferred that death has taken place from a few minutes to three or more hours previously.

Second Period.—" In this the body is perfectly cold throughout, and the cadaveric rigidity is well marked. The muscles are no longer susceptible of contracting under galvanic or mechanical *stimuli.*" In such a case death may have occurred from less than two hours to twenty-four hours (three days in cold climates) previously. Naked or scantily-covered bodies may become cold externally, and rigid in a very short time. Madras *post mortem* records show that rigidity is commonly present in bodies which have been two or three hours dead.

Third Period.—Cadaveric rigidity has disappeared. This stage may last for some hours—longer in cold climates.

Fourth Period.—Putrefaction begins, a slight bluish-green discolouration of the skin of the abdomen being usually its first indication. In Madras this stage ordinarily begins about twenty hours after death.

It must be borne in mind, that there is no very clear demarcation between these periods. For instance, we may have internal warmth preserved after rigidity has occurred. In other cases putrefaction sets in very soon after death. In some cases of death from gunshot injury, rigidity occurs almost immediately after death. The above periods therefore can only be taken to afford approximate indications of the time of death in ordinary cases.

Hypostasis.

There are changes which take place in a dead body, the signs of which, if not carefully noted, are calculated to create a false impression of violence. These changes come on during the act of cooling, and are termed cadaveric rigidity and hypostasis. At a later period dark livid patches appear on the skin which are called sugillation or *post mortem* ecchymosis. These appearances have occasionally given rise to serious mistakes being committed, owing to a suspicion of violence being raised. Christison refers to two cases, in one of which two persons were convicted, and in the other, three narrowly escaped conviction, (see Illustrative Cases, Nos. XXIX and XXX). The causes of these appearances are thus described by Taylor:—

The first form, hypostasis, occurs before putrefaction, and is dependent on a stagnation of blood in the capillary vessels. When, after death, the capillaries have lost their contractility, the blood appears to stagnate in them in an irregular manner, producing lividity. The skin of the body, although pale at the time of death, becomes covered, during the act of cooling, by extensive patches of a bluish or slate colour, diffusing themselves over the greater part of the trunk and limbs. These hypostases are chiefly seen on the bodies of those who have died suddenly in full health or by a violent death, as in apoplexy, hanging, drowning, suffocation from charcoal vapour, &c. It is rarely seen in the bodies of those who have died from loss of blood. If, after death, the body is wrapped up in a cloth and allowed to cool, the congestion of the vessels is apt to take the form of the folds, and the parts actually compressed remain white. The result is an appearance of stripes as from a flogging. "The unbroken state of the cuticle, with the other characters just now mentioned, are, however, sufficient to distinguish this appearance from the effects of violence." Dr. Taylor saw a well marked case in which so strong a suspicion was raised, that a coroner's inquest was held. "The fore part of the body was covered with stripes which were of a red livid colour. They appeared to correspond exactly to the folds of a sheet drawn tightly across the chest, and it was subsequently ascertained that the body of the deceased had been treated in this manner after death." One case (see Illustrative Case No. XXXI) is quoted, in which symptoms were seen, which ordinarily are only to be found in vital ecchymosis. Around the patches was a wide border of a pale straw colour, with various shades of green, precisely similar to those which are seen when ecchymosis is gradually disappearing from the living body. During the

Changes produced by putrefaction.

stages which the body goes through in the course of putrefaction, there are changes which take place in the viscera, which, if not carefully examined, may give rise to a suspicion of death from an irritant poison. Regarding these changes, Taylor says: "The mucous membrane of the stomach may be found of various tints, from a red brown, becoming of a brighter red by exposure to the air, to a deep livid purple or slate colour, and sometimes black from a decomposition of the blood. At the greater end, where the stomach is in contact with the spleen or liver, the lividity is often well marked and clearly defined through all the coats. The peritoneal, or outer coat, is of a greenish hue, and the course of the superficial vessels is marked by greenish brown or black lines. These marks, which are the result of putrefaction, may be easily mistaken for the effects of irritant poisoning. There are no rules that will always enable a medical jurist to distinguish such cases." Each case must be judged by its own attendant circumstances. Of course, if symptoms of this kind were found *before* decomposition had set in, they could not be due to that cause, and would probably be due to poison. In cases of doubt, "it is therefore better to withhold an opinion," than to state what can be really nothing more than a conjecture.

In the same way the mucous membrane of the stomach and upper part of the small intestines often presents, during putrefaction, a yellowish or green tinge, depending on the transudation of the bile, or the colouring matter of the fœces contained in the colon. This must not be mistaken for the appearance of poisoning by mineral acids. The medical man who examined the body, should be asked whether there was also any softening or corrosion, and whether the throat and the gullet were also implicated. If these signs are absent, the symptoms have not been produced by such poisons. So also melanosis in the stomach, *i.e.*, a deposit of black colouring matter beneath the mucous coat, might be mistaken for the effect of sulphuric or oxalic acid, or caustic alkalies, but as melanosis is unaccompanied by any marks of inflammation, corrosion, or destruction in the mucous membrane beneath, it should be easily distinguished from the effects produced by such poisons.

Ulcerations of the mucous membrane of the stomach and intestines are common in India, and should not be confounded with putrefactive changes, but it may not always be easy to distinguish them from erosions due to irritant poisons.

Softening, and even perforation of the stomach, occasionally results from an action of the gastric juice exerted after death. In these cases the softening is gelatinous, and is not accompanied by signs of inflammation, such as redness at the margins of the softened patch and peritonitis.

As putrefaction commences, a change in the colour of the skin of the abdomen takes place, which acquires a pale green hue, gradually deepening and extending to the skin of the chest and the limbs. This is different from the hypostasis already alluded to, because that change only takes place whilst the body still retains some warmth, and directly the body becomes cold it is arrested. The change now spoken of occurs after the body has become cold, and when decomposition has commenced.

Fat flabby bodies undergo putrefaction more readily than thin and emaciated ones, and, as already pointed out, the parts which have sustained injuries, such as wounds, lacerations or bruises, commence to decompose first, and then show exaggerations of the actual injuries inflicted. Again, bodies of persons who have died from acute diseases, commence to putrefy before those who have died of wasting and chronic disease.

Guy gives the following rate of putrefaction in the internal organs :—

The stomach : In from four to six days after death, dirty red patches appear on the posterior wall and gradually extend over the whole interior. These changes are sometimes mistaken for the effects of corrosive poisons. The intestines follow next and then the spleen ; then the liver, which, however, may retain its firmness for some months ;

putrefaction commences with a green colour on the diaphragmatic surface. The brain follows next. It collapses after death, and putrefaction commences in the line of vessels. In two to three weeks it becomes quite diffluent. The brain of children, however, is the first organ destroyed by putrefaction. The heart and lungs putrefy more slowly, so that traces of disease are distinguishable in them long after they are quite decomposed. Orfila detected pneumonia thirty-seven, and signs of pericarditis fifty-seven, days after death. The kidneys resist putrefaction even longer than the heart and lungs; the bladder, the œsophagus, and the pancreas resist still longer; and the diaphragm may be distinguished even after four to six months. The uterus resists putrefaction longest of all, and enables us to distinguish the sex after the complete destruction of all the other soft parts. Caspar found it at the end of nine months in a fit state for examination, so that he could solve the question, whether the deceased died pregnant, when all the other viscera were gone and the bones almost separated from one another.

The period of death, as inferred from the state of decomposition, is often a point of great importance, but the cases quoted are so conflicting, that no safe rules can be laid down as to the exact time which has elapsed since death. There are so many different factors which have the effect of accelerating or retarding decomposition, that each case must be judged by its own circumstances; and whenever there is any possibility of doubt, the medical witness should be most careful not to give a decided opinion. It is, however, clearly established that decomposition sets in soonest when the body is exposed to the air. In buried bodies it is slow in dry sandy soils, as in Egypt, or in gravel and chalk, to which water has no access. It is quick in marl or clay, and quicker in proportion as air or water has access to the spot. It is slower in deep graves than in shallow ones, and is quicker in bodies buried without any covering, becoming slower in proportion as the coffin is able to resist the air and the surrounding influences of decay. As regards water,

Decomposition in air, earth and water.

Dr. Chevers gives some notes on the periods when, owing to the generation of gases, bodies rise to the surface in this country. The earliest period mentioned by Dr. Woodford at the hottest time of the year, was twenty-four hours.

Buoyancy of decomposed body in water.

An interesting case occurred within my experience. A woman was killed on the night of a Friday, and the evidence went to show that the body must have been thrown into a well about midnight. On the following Sunday morning, about meal-time, and therefore about 8 or 9 A.M., the body was found floating with a heavy stone attached to it. The woman was said to have been of slight figure and short stature, and therefore probably when alive, did not weigh more than 100 to 105lbs. The stone itself weighed 92lbs., so that the decomposition in thirty hours must have been so rapid as to generate gas capable of raising, not only the body itself, but the dead-weight attached to it. The stone was attached to the waist, and the body, when found, was lying horizontally on the surface of the water on its side. The water was from ten to twelve feet in depth, and the specific gravity of the stone was 2·7. This case is of interest, as showing the extreme buoyancy of a decomposed body in water, and the rapidity with which gases can be generated. The murder occurred in September 1883.

Out of a number of victims of a river accident, which occurred in Calcutta in 1867 (January), notes were taken of the time when the bodies came to the surface. In none of these cases were any bodies found under three days, and in some cases they did not rise to the surface until six or seven days after the accident. As a general rule, bodies in this country, when found in wells of an average depth, rise on the third to the fifth day, and then show all signs of decomposition. In the accident above alluded to, the four first bodies were recovered three and a half days after death, but no mention is made of any signs of decomposition.

ILLUSTRATIVE CASES.

(Part I, Chapter IV.)

XXIX.—*Hypostasis mistaken for marks of injury.*

A man named Keir, and his mother, were tried on the Aberdeen Circuit for the murder of the father of the man. The prisoners were condemned, but the only evidence of any weight against them, was the appearance of a broad blue mark on the fore part of the neck, which the witnesses compared to that produced by strangulation. There was, however, great reason to believe, from their own description of it, that it was due to natural changes after death.—(*Taylor.*)

XXX.—*The same.*

Three men left a public house, intoxicated and quarrelling with one another. On the next morning one of them was found expiring in a wood, and he died soon afterwards. Two surgeons deposed that they found the marks of numerous contusious all over the body; and upon this deposition the two companions of the deceased were committed and subsequently tried. At the trial, Dr. Bell and Fyfe proved, to the satisfaction of the court, that the apparent contusious were nothing else than the livid patches, or hypostases, which sometimes occur spontaneously on the dead body after many kinds of death. The accused were acquitted.—(*Taylor.*)

It is worthy of remark that hypostasis is frequently noticed in cases where persons have died under the effects of intoxication, and to this cause may perhaps be due the symptoms in the case quoted by Beck (*ante* Chap. II).

XXXI.—*The same.*

A man died in 1837, in the Dreadnought hospital, of disease of the heart. Just before death he had been auscultated, and there were then no marks on the body. Eighteen hours after death the body showed numerous patches, varying in size. They greatly resembled bruises, and occurred only in those parts of the body which were not compressed by the position in which it was lying. A peculiarity about these marks was that they appeared exactly like vital ecchymoses with a border of pale straw colour with various shades of green and blue. In remarking on this case, Taylor says: "Had the body of this person been found lying dead on a high road, and had it been proved that another man had been seen quarrelling with him, what might have been the opinion expressed? We can scarcely hesitate to say, unfavourable to the accused." The hypostasis might have been wrongly held to be the marks of blows, and the death from heart disease might have been held to have been brought on by the excitement caused by those blows.

XXXII.—*Effect of the generation of gas in decomposition.*

Dr. Chevers quotes a case in which the effect of the gas, generated in a decomposing body, was to eject from the uterus a four months' fœtus, together with the acrid root which had been used for the purpose of procuring abortion.

Taylor quotes a similar case, in which the gases had sufficient force to expel the fœtus from the uterus when the woman had died during labour and undelivered.

A similar case was also the subject of a coroner's inquest at Sydney in 1864.*

XXXIII.—*Difficulty of calculating exact period of death from the state of decomposition.*

The leading case on this point, quoted by all the medical jurisprudents, is Reg. v. Byrne, in which a woman was tried for the murder of her husband (Dublin, 1842). The prisoner and the deceased were in the habit of drinking to excess. On this occasion they had retired to their room and had remained in it for eight days. Four days before he was found, the husband had been seen alive at the door. On the eighth day the prisoner called one of her sons, and the body of the husband was found in an advanced stage of decomposition, whilst the prisoner was still in the room. The medical witness, who first saw the body, was led to believe that it had been dead at least four to five days. There were no special marks on the body of injuries except certain discolourations, and internally the heart was empty, and so were the vessels of the brain. The body was found on its face. During the time they had been together in the room, a large amount of spirits had been consumed. The prisoner made two statements: first, that she slept in the bed on Thursday and Friday, and that deceased died on Friday. She subsequently stated that he died on Saturday, the day when the body was discovered. Two medical witnesses said, deceased must have been dead four to five days; two declined to give an opinion; and one said that such changes might take place in from twenty-eight to thirty hours. (The mouth was July, and the room itself was very close.) On the one hand, it was argued that the deceased had died from strangulation, judging from some black marks on the neck, and the protrusion of one eye and of the tongue; and, on the other, it was argued that these marks were natural; that deceased may have smothered himself whilst in a state of intoxication, by turning his mouth and face on the pillow, or that he might have died in a fit. The discolouration of the face, the protrusion of the eye and tongue, and the discharge of fœces might be accounted for by his dying in a convulsive struggle, or the symptoms of the eye and tongue might be simply due to advanced decomposition (of which there are numerous recorded cases). The emptiness of the heart, which was adverse to the theory of strangulation (asphyxia) was referred to the mechanical effect of gaseous putrefaction on the organ. The emptiness of the brain was unexplained. No motive was assigned for the murder, and the principal point against the prisoner was that she must have been in the room at least twenty hours after the death, without calling for assistance. The prisoner was acquitted, and Taylor says, "The jury were properly informed by the learned judge (Baron Pennefather) that they were not to convict the prisoner on probability, however strong, or on a mere preponderance of medical opinion."—(*Abridged from Taylor and quoted by Tidy and Beck.*)

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* *Note.*—The generation of gas frequently leads to *post mortem* hæmorrhage, and this bleeding is apt to be produced by pressure on an inflated part; the gas thus compressed, seeking to escape, forces out the blood from the nearest aperture, hence the old superstition, that a dead body would bleed at the touch of the murderer.

XXXIV.—*Case of a body being found in the same house as the murderer.*

This was rather a singular case, and was tried in the November sessions at Cuddapah (1883). Prisoner was a Brahmin of dissolute habits, and deceased was an elderly woman. One day, about noon, prisoner was seen taking the deceased to his house. She did not return. After some time the daughter went to the house and enquired after her mother. Prisoner told her that she had gone away to a village two miles distant. This was found to be untrue. The daughter returned in the evening, and told this to the village authorities, who went to prisoner's house. Being late, they did not search it, but remained in the house with the prisoner the whole of the night. During this time the prisoner was described as if under the influence of drink. Next morning the body of deceased was found in an inner room, perfectly naked and covered with several deadly incised wounds. The floor and walls showed considerable traces of blood. In this case the prisoner had himself given a written statement that he had killed the woman, otherwise it is probable that he would have been acquitted. No other motive for this singular murder was given than that the deceased had probably seen a bottle of arrack and some meat in his house, and that he had killed her for fear that she would tell this in the village, and he, being a Brahmin, would lose caste. If this was the real motive, prisoner was at the time of the murder probably intoxicated. He was convicted and hanged, and is said, before execution, to have confessed to the police. There was a great deal of popular indignation against this man, especially amongst the Brahmins of the town, numbers of whom came to see his execution.

CHAPTER V.

WOUNDS AND INJURIES AS AFFECTING DIFFERENT PARTS OF THE BODY.

Wounds of the head.

Scalp wounds of an incised nature, unless of considerable extent, rarely produce serious effects. Contused wounds of the scalp, on the other hand, are dangerous, because of their tendency to assume an erysipalatous character. Wounds on the head are very various in their results. The most serious injuries involving fracture of the skull, and even loss of a portion of the brain, are sometimes followed by perfect recovery, whereas the slightest contusions may be attended by fatal results. A slight blow, leaving scarcely perceptible marks of injury, may produce abscess of the brain, and death. Two of the most dangerous results of a severe blow on the head are concussion and effusion of blood on the brain. In cases of this kind death is sometimes instantaneous, but at others it does not occur until after many days. Taylor points out the necessity of a careful examination on the part of the medical attendant in order to distinguish between concussion and the results of intoxication. A man may be intoxicated, but at the same time may also be suffering from concussion. Dr. Taylor says: "There is nothing in the state of the brain which will enable a practitioner to distinguish whether concussion or intoxication had existed and had been the cause of the symptoms. In both cases the vessels may be congested. The discovery of alcoholic liquid in the stomach may lead to a presumption that the deceased had been intoxicated, while marks of violence on the head may favour the view, that he had suffered from concussion. At the same time it is possible for extravasation of blood to be produced on the brain by a blow which leaves no mark of injury whatsoever. Cases have occurred, in which death has happened from effusion of blood on the brain without any violence, simply as the spontaneous result of violent exertion. Cases of this kind are no doubt rare, but the possibility of their occurrence should make a medical man very cautious in the expression of a decided opinion where there are no marks of injuries to be found. The general condition of the blood-vessels should always be noticed in such cases, since disease of their coats would favour rupture. A case is recorded in which effusion of blood on the brain has been caused by a violent blow on the neck over the jugular vein. Death was instantaneous. Effusion of blood on the brain may also be produced by excitement, but cases of this nature are rare, unless the excitement has been caused, or has been accompanied, by blows. Where a death of this kind has occurred, careful notes should be taken of the habit of body of the deceased. If of intemperate habits, or of a full habit of body, the death may have occurred from apoplexy, the result of excitement only, and not of a blow.

Fractures of the skull.

These injuries are very common in this country, and are generally produced in the North by the *lattee* or bamboo; in this Presidency by the rice-pounder, and frequently by pounding with a stone. It is generally found, that not only has one blow been struck, but a great many, and the skull is frequently fractured in several places, and often smashed to pieces. Fractures of this kind are generally caused in the heat of a quarrel, but it is worthy of remark, that pounding with a stone is frequently the result of a deliberate act, and especially when the deceased has been suspected of sorcery. A favorite punishment of a reputed sorcerer is to pound out his teeth with a stone. There are also several instances of murders having been committed in this manner by women, on the persons of young children, whom they have robbed of their ornaments. As regards fractures, it may be remarked, that it is most difficult to produce a fracture of the skull on a body already dead. Caspar speaks of several experiments that he made to test this, the instrument used being the wooden mallet used to prop up the head during dissection. Fractures need not necessarily be caused on the spot where the blow falls on the head, and a severe blow on one part may produce a fracture at a point diametrically opposite to the part struck. These *counter-fractures*, as they are called, are due to the physical law, that the parts, in which the force applied to any hollow dome becomes concentrated, are diametrically opposed to each other (Baynes).

The face. Wounds on the face are dangerous as generally causing deformity, and owing to the risk of the brain becoming affected. Injuries to the eye are of frequent occurrence, and, if made by a sharp-pointed instrument, such as a needle or a stylo, there is danger of the brain being pierced. An instance is given of this in Illustrative Case, No. III, attached to Chapter No I. In the same way, a sharp-pointed instrument might be inserted through the nose, and could thus reach the brain without leaving any external mark of injury. I have not, however, come across any such recorded case. A crime, by no means unfrequent, especially in the wilder and less civilized portions of the Presidency, is mutilation of a female by cutting off her nose. This is generally done as a punishment for an act of adultery, and a similar incident is told in one of the stories of the Panchatantram, in which the husband, by mistake, cut off the nose of a procuress instead of his own wife.

Injuries to spine. In many cases of sudden death, where there are no marks of violence to be found, if a careful examination is made, it will probably be found that there is injury to the spinal marrow. A slight injury has been known to cause death by giving rise to inflammation. The spinal cord is also liable to compression from slight causes resulting in almost instantaneous death, but leaving no external marks of

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Cf.—Worm in the eye with horses is often followed by weakness in the loins. The organ of the eye being injured, the horse in the stall and elsewhere is apt to throw his head back suddenly, thereby possibly causing injury to the spinal marrow. Query: Are these two diseases connected?

injury. Fractures of the vertebræ of the neck have occurred from very trifling causes, such as suddenly throwing the head back, and there is one recorded case (Taylor) of a fracture of this kind having been caused by a patient turning in bed while his head was compressed by the pillows. In this case death did not ensue for sixteen months. In the case of children, a child has been known to be instantaneously killed in consequence of its having been lifted up by the head. Taylor remarks: "Injuries to the spine and its contents are generally the results of falls or blows, either on the head or the lower part of the column. The secondary consequences of these injuries are sometimes so insidious as to disarm suspicion, and death may take place quite unexpectedly some weeks after the accident."

To the chest.

Incised wounds to the chest, which do not penetrate to the cavity, are seldom dangerous. Contused wounds, on the other hand, are far more dangerous, and the danger is in proportion to the violence used. By the fracture of a rib, or of the sternum, a bone may be displaced and driven inwards, thereby wounding the lungs, liver, or the heart; or the viscera may sustain severe injuries and be ruptured. Dr. Chevers alludes to a practice, "well known in Bengal, especially in the Northern districts," which is called *Bansdola*. It is a mode of compressing and rolling the limbs or body between two bamboos, with a degree of severity ranging between that which tortures severely, by contusing the muscles, or by rendering respiration difficult, and that which reduces the muscles to a jelly, or breaks the ribs, and crushes the lungs into a disorganized pulp. This practice of *Bansdola* is not confined to the chest, but is often inflicted on other portions of the body. For instance, the upper portion of the thighs may be compressed between four bamboos, two on the upper part and two underneath. A space of four or five inches is left between the two upper bamboos, and the ends of the upper bamboos are tightly tied to those below. The part between is then beaten with a ruler for a considerable space of time. There is no need

Torture of *Bansdola.*

for any violence, and unless this is used, there remain scarcely any external marks, and there is nothing but a slight general swelling, which may be mistaken for stoutness. The pain inflicted, however, is intense, and the injury to the muscles so great, that cases have occurred in which the part thus injured mortified, causing death. In one case of torture of this kind, which occurred whilst the deceased was in custody of the police, "the body was discovered one mass of bruises. The 4th, 5th, 9th, 10th and 11th ribs of the right side were broken, and the 8th, 9th, 10th and 11th ribs were dislocated on both sides of the spine. Both lungs were injured, and the whole of the muscles of the back, shoulders and loins, were reduced to a pulp. The evidence went to show that the deceased was beaten and poked by the constables with their staves, their wooden sandals and their elbows, and that his body was jumped upon" (Chevers).

Torture and confession.

The date of this brutal act of torture is not given, and it might perhaps be doubted, whether in the march of civilization, torture of this kind is now-a-days practised. It is probably not practised to such an extent, because detection would now be inevitable; but there can, I think, be little doubt, that in a great many cases, confessions made to the police are obtained by improper means. In preparing the materials for this book, nearly one thousand reports of cases decided by the Foujdaree Udalut have been gone over, and it is a remarkable fact, that in almost every case of grave crime, there has been a confession before the police. In a very large number of cases the confessions have been made for apparently no reason whatsoever, and very often the confession is the sole evidence against the prisoner, corroborated by the stolen property, which he himself voluntarily shows. It is remarkable that we find crimes of violence, which have clearly been committed with every sign of premeditation, and with every precaution to avoid detection; and yet, with no evidence against them, the prisoners voluntarily confess and show where they have hidden the stolen property. This frequently occurs in trials now, and though, in the course of my twenty years' experience in criminal cases, I cannot remember one well-substantiated case of torture whilst in police custody, (I mean substantiated by marks and evidence of violence), there have occurred many cases in which the very gravest suspicion has attached to the manner in which a confession was made. Confessions made to the police are rightly in this country inadmissible as evidence, except in so far as they relate to property produced; but when once elicited, the accused is quickly taken before a sub-magistrate, to whom he repeats the confession, and it then becomes admissible. With the recollection of recent injuries before him, of course, the accused does not hesitate to repeat to the magistrate his confession, and it is only when he comes before the higher court that he withdraws it. A phrase of very ordinary occurrence, in the evidence of a police officer, is as follows: "After being for three days in our custody, one morning, about half an hour after head constable——had taken the prisoner to the vanka for purposes of nature, he came back and stated that he was willing to confess. In consequence of that statement, we took him before the sub-magistrate," or, "after making that statement, the prisoner took us to the jungle, where, from under a stone, he produced the stolen property," &c. It is worthy of remark, that even if these statements have been extorted, they are, in a great number of cases, extorted from the actual criminals, because they are able to show where the property is hidden. On the other hand, it is very significant that the property produced very often consists of articles, such as a common cloth, or a plain silver bangle, almost incapable of identification, since every other person will have articles of a similar description. There is good reason for believing that in many cases false confessions are extorted and the accused are induced to say that they have committed the offence and are then *told* by the police to lead the way to a certain spot where some worthless articles have been already hidden away (see Illustrative Case No. XLII of a false confession). Of course, in cases of this kind, a considerable amount of violence is not used, because it would leave marks which would lead to detection. A small dose, however, of *Bansdola*, if judiciously administered, leaves no traces, and is capable of inflicting quite enough pain to induce a man to confess. There are other ways of extorting confessions, by means which leave no traces whatsoever, such as mixing large quantities of salt with the food and then withholding water, preventing the prisoner from getting any sleep, &c., &c.; but practices of this kind must be treated under a different head.

Pressure on the chest and internal injuries.

It is remarkable what an enormous amount of pressure the chest will bear without causing death. This is proved by the immense weights which, in former years, were used to extort confessions, and as punishment for crime in Europe in the *peine forte et dure*. Even in the last century this barbarous practice was still in force. In 1735, at the Lewis Assizes, "a man had laid upon him, one by one, three hundredweight—then fifty pounds more. 'When he was nearly dead, having all the agonies of death upon him,' the executioner, who weighed sixteen or seventeen stone, lay down upon the board which was over him, and killed him in an instant." "In January 1720, William Spigott, at the Old Bailey, bore four hundredweight on his body for more than an hour, and thereafter was hanged. At the Old Bailey, in January 1721, a highwayman, after enduring the punishment an hour, and having three or four hundredweight put upon him, at last submitted to plead" (Chevers, p. 441). It is by no means uncommon to find cases of sudden death in a lunatic asylum, after there has been a struggle between the patient and his keeper. With a violent maniac, the keeper, in closing with him, generally places his knee upon the patient's chest and endeavours to throw him down. The fall of two heavy bodies, with the knee of one of them in this position, is calculated to cause severe internal injury without leaving any external signs. In 1870, a case of this nature occurred in England in the lunatic asylum of Prestwich, in which *seven* ribs were broken without leaving any external mark. A very similar case occurred this year (1884) in this country, when the insane Rajah of *Kolapoor* died suddenly after a struggle and a fall from his keeper. It is by no means uncommon, where death has been caused by sudden violent injuries to the chest and abdomen, that the whole of the internal organs are ruptured without leaving any external traces of injury. *Caspar* gives a remarkable case in which a wagoner was crushed by the wheel of his own cart against a tree. There were no external marks of injury, but on dissection the spleen, liver and heart were all found to be ruptured and lacerated to a frightful extent, and the whole of the internal organs, more or less, affected. The same author gives another case of a sailor who was killed by the fall of a mast, and who died after six hours. *There was no trace of ecchymosis to be found over the whole body*, but the following internal injuries were found: a small fissure in the right orbital plate of the frontal bone; on the right side five ribs were fractured, from the third to the seventh inclusive, and about six ounces of serum were effused into the pleural cavity; at the posterior surface of the liver there were four lacerations, obviously caused by the protruding ends of the fractured ribs, and about six ounces of blood effused into the peritoneal cavity; further, the bones of both fore arms were transversely fractured; and finally the right femur was completely splintered.

Wounds of the lungs.

Death in these cases is caused by hæmorrhage, which takes place internally as well as externally. A wound of the lung may be recognized, among other symptoms, by the frothiness and florid colour of the blood, which issues from the wound, as well as by the expectoration of blood. Wounds to the lungs may be caused directly, as by stabs or gunshot, or indirectly by the fracture of a rib or the collar-bone, the end of which may lacerate the organ. The lungs may, however, be ruptured by external violence only without the fracture of a bone. A case is recorded of a boy who was killed by being driven over by a carriage. No bone was fractured, but the lungs were found lacerated, and the consequent hæmorrhage was the cause of death.

Wounds of the heart.

As has been previously shown, wounds to the heart are not so instantaneously fatal, as is generally supposed, and there are many instances of persons who have survived for many days after sustaining severe injuries to that organ.

In the same way as the lungs, the injuries may be caused directly or indirectly by the fracture of a bone, or even by a severe blow which, without breaking a bone or leaving any external mark, may yet cause a rupture of the heart. There is one case recorded of a woman who swallowed a fish-bone, which, by protruding through the stomach, perforated the heart (Taylor, 659). Ruptures of the heart from natural causes are not uncommon. "Hope asserts, that in ruptures from natural causes, it is the left side of the heart, and particularly the left ventricle, in which a rupture is most frequently found." In some cases rupture of the heart from disease may excite a suspicion of death from violence. The natural causes of rupture of the heart are violent mental emotions, such as anger, fright, terror, paroxysms of passion, sudden or excessive muscular efforts, or violent physical exertions in constrained positions. If the heart is once in a diseased condition, as, for instance, fatty degeneration, rupture and death may be brought on by very slight causes. A very slight excitement, or even the exertion required for an ordinary walk, has been sufficient to produce this result. An injury to the diaphragm, *i.e.*, the muscular partition between the chest and the stomach, may prove the cause of death long after the injury has been caused. The wound may heal, but the cicatrix may, by some unwonted exertion, or from a slight blow, again open. Death in such cases is generally caused by some portion of the viscera obtruding through the wound and becoming strangulated.

Injuries to the abdomen.

Incised wounds and contusions on the abdomen are likely to be of a very dangerous nature, owing to the slight protection afforded by the outer covering and the ease with which the vital organs may be affected. A blow on the upper part of the abdomen, "the pit of the stomach," may cause instant death without producing laceration or contusion of any organ. This effect is generally ascribed to concussion of the semi-lunar ganglia of the sympathetic nerve. A blow on the abdomen may cause death by rupture of the spleen, of the liver, of the intestines, of the bladder or of the gall bladder, and leave no external trace whatsoever. Ruptures of the spleen are especially common in this country, where, in feverish parts, nearly one-half of the people have spleens more or less diseased and enlarged. Rupture of the spleen is almost invariably fatal, but the period within which death takes place varies considerably. Sometimes it is instantaneous, and at others it has only followed after a considerable time. A case is recorded by Dr. Chevers of a soldier who was hit on the left side by a piece of shell, on the day of the final attack upon the Redan. He was suffering from "severe pain in the left side, which was augmented by pressure over a circumscribed place, corresponding to a point a little external to the cartilage of the ninth rib, and not more than three inches in circumference; there was anxiety of countenance and accelerated pulse, but no abrasion of the surface, no fractured rib, no swelling or discolouration of the part." He was treated for the symptoms, and discharged two days after at his own request, and, to all appearance, quite well. He returned to duty, which he performed, as usual, for two days, when he was re-admitted with symptoms of double pleurisy, under which, with pericarditis, he died on the eighteenth day after receiving the blow. The peritoneum, throughout its entire extent, was of an almost perfectly black appearance, as well that of the parietes, as that of the intestines; the omentum was likewise black, but in no other respect did the peritoneum differ from its healthy character. It was still glistening, tense and elastic. The spleen was about three times its ordinary size, ruptured to the extent of two inches in its long axis, and to a considerable depth in its anterior and external aspect. Its substance was infiltrated with congealed and black blood: the vessels were uninjured. There was no fractured rib and no laceration of the parietal peritoneum. This question, of how long a man can survive

Survival under.

and what exertion he is capable of going through after receiving the injury, will often arise in the course of a criminal trial, and once came before me in the course of a magisterial enquiry into a rather typical case for this country, (see Illustrative Case No. XLVIII). There seems to be no doubt that no definite rule can be laid down, and a man with a ruptured spleen might be quite capable of walking, and yet eventually die of the rupture. A very remarkable case is given by Dr. Fayrer, in which a Hindoo was admitted to the hospital with a fracture of the left fore-arm and compound dislocation of the right wrist-joint, caused by a fall from a tree. For the first two days he complained of pain in the hypogastrium and passed bloody urine. These symptoms gradually passed off, and the secretions became normal. The injuries to the arm, however, assumed an unfavourable aspect; tetanus set in, the arm was amputated, and he died sixteen days after the accident. On examination the liver was found to be ruptured; there were two ruptures in the spleen, and there was an extensive rupture in the left kidney. And yet with all these injuries the patient, except for the first few days, appeared to suffer no evil effects; and, as far as could be judged, death was caused only by the injuries to the arm.

Wounds to the bladder and the gall bladder generally prove fatal, the latter causing peritonitis. A case is related by Taylor of a gentleman who had been prevented, from some cause or other, from retiring to his room, and who felt pain from distention of the bladder. Whilst going down-stairs, he accidentally struck his abdomen against some projection. The pain at once passed away, and also the desire to pass urine. He then went out to the house of a friend, where he was engaged to dine. A doctor, one of the guests, to whom he told this, at once suspected that rupture of the bladder had taken place. This proved to be true; the symptoms set in almost immediately, and the gentleman died in three or four hours.

Mutilation.

Under Hindoo law, mutilation of every portion of the body is authorized as a punishment for certain offences; for instance, hand or foot; both hands; one hand and one foot; both hands and both feet; buttock; lip; penis; half the penis; testicles; pudenda; fundament; ears; nose; breaking the teeth, finger or fingers; pulling out the eyes, &c. Mutilation, as a punishment, appears to have been prevalent throughout Asia, and is practised in China to the present day. Amongst the lower classes, cases of mutilation, such as cutting off the nose, the hand or an ear, are by no means uncommon, and occur generally on account of quarrels or jealousy regarding a woman. Gouging the eyes also occurs, and in former days the usual punishment inflicted upon royal princes who were guilty of rebellion, was to deprive them of sight by passing a red-hot needle through their eyes. Gholam Khader gouged out the eyes of the Emperor Shah Alam, with his own dagger, and throughout the pages of Indian history numerous instances of this kind of punishment are to be found. Mutilation of the testicles is an exceedingly common offence, but it occurs generally in combination with some other injury, such as strangulation. The testicles are sometimes cut off, but more generally squeezed, whilst another of the gang is engaged in throttling the victim. In 1870 a case came before me as head-assistant magistrate, in which the district moonsiff of Sholinghur was charged with having abetted the torture of a Brahmin boy, who was suspected of having stolen a jewel. Amongst other tortures inflicted to make him confess, it was proved that the sharp-pointed leaf of the date bush was pushed up the urethra, and used for pricking the testicles. Considerable injuries were found on these parts by Dr. Silas Scudder, and the moonsiff, together with several others, was committed to the sessions court and convicted.

Fractures.

It is almost impossible for a medical witness to say whether or not a fracture has been caused by a particular weapon, and very often exceedingly difficult to state whether a fracture has been caused by a blow or by an accidental fall. Of course, when there are other attendant signs, he may be able to give an opinion that the fracture was caused by a blow. There are, however, so many cases of severe fractures occurring from falls whilst walking or in falling from a short distance, that each case must, to a certain extent, depend upon its own circumstances. The bones vary in brittleness at different ages and in different individuals, and skulls vary much in thickness, being occasionally so thin as to be fractured by a slight blow. With children and with old persons a slip and fall, whilst walking, is capable of producing a fracture. I have known a family in which three of the children at different times fractured an arm or a leg by a simple fall whilst playing, and I have seen another case in which a gentleman of about thirty years of age fractured his skull by falling down whilst rising from his chair. It is supposed, that at the time when he rose, he was suddenly seized with an apoplectic fit, but he was in sound health five minutes before the fall. The mere presence of a fracture, without any other suspicious signs, is no proof of criminal violence; it may be due entirely to accident.

All medical jurisprudents agree that it is much more difficult to cause a fracture after death, even a short time after death has occurred, than is the case during life-time. As soon as death has occurred, the flesh and the muscles lose their elasticity, and it requires much more violence to cause a fracture after death than before. A fracture during life is also generally accompanied by an effusion of blood around the broken parts, and though it is by no means impossible for bleeding to result from a blow caused soon after death, it is not likely. In the case of a fracture, where the parts show no signs of bleeding, there would, however, arise an irresistible presumption that it had been caused after death. I have heard it asserted by a medical witness, that a man whose rib has been fractured, would not be able to walk a considerable distance afterwards. This, however, depends entirely upon how the rib has been broken, and whether, in its displacement, it has affected any vital organ. I have met with the case of a gentleman, who, in a fall during a steeple-chase, broke a rib, and afterwards remounted and finished the race, and did not find out until the third day afterwards that his rib had been broken. There is a case reported in the newspapers of a well-known sporting nobleman in India, who dislocated his collar-bone at a fall, but continued the race without knowing what had occurred. The mere breaking of a bone, or the dislocation of a joint, unless of course in one of the lower limbs, need not necessarily interfere with locomotion. If it occurs during excitement, the injury is sometimes not felt until the excitement has passed over, unless the displacement of the bone directly affects a vital organ.

Gunshot wounds.

These wounds come under the order of contused wounds, but differ from others, in the fact that the vitality of the parts struck is destroyed, leading ultimately to sloughing. Caspar, whose recorded experience is unrivalled, says that "no one such wound resembles another." In one case, we have such a mangling of the countenance, that the body can be no longer thereby recognized; in another, there is nothing to be seen on the body except a small insignificant wound, and that too, in some out-of-the-way part, such as the axilla or popliteal region, and yet both are gunshot wounds. It is possible to lay down but few generally applicable criteria in regard to such wounds, and according to our experience, these few are the following:—"Every gunshot wound, which is not a mere grazing wound of the skin, is either *perforating*, and we have a wound of entrance and a wound of exit, or it is *penetrating*, and the shot does not pass through, but lodges and makes only one wound. In such cases, it is often a most vain proceeding *to attempt to find* the ball, piece of lead or shot in the living body, even when such a solid projectile has been employed, which is by no means always the case. Every gunshot wound has the peculiarity of becoming larger the deeper it goes. Should the ball lodge in any soft part, the cavity in which it is found, is often from two to four times the diameter of the wound of entrance. But the wound of exit is always smaller than the wound of entrance;" and again, as already once remarked, the wound of entrance generally appears to be smaller than the bullet which caused the wound. The Text-books generally say that the wound of entrance has its edges inverted, and the wound of exit the edges everted, but this Caspar affirms to be by no means the case. Projectiles travelling at a low velocity, or which become flattened out or broken up after striking, such as "snider" and express rifle bullets, undoubtedly make an exit much larger than an entrance wound. These appearances will depend greatly upon circumstances, and if the person wounded, or the part struck, be very fat, owing to the protrusion of fat through the wound of entrance, the edges of it will be found anything but inverted. The appearance of a wound from a conical bullet differs greatly from that caused by a round one. A conical bullet causes "a trifling, unecchymosed, slightly contused aperture, not always round, often more triangular, from the appearance of which no one would suspect the amount of destruction to be found inside. Should the ball have passed through the body, the aperture of exit is precisely similar;" but, adds this cautious author, "but just because of these appearances, I would recommend the greatest caution in regard to the answers to any queries respecting the apertures of entrance and exit in the case of wounds with conical bullets." When the gun has been charged with shot, the nature of the injury depends very much upon the distance the gun was from the body when fired off. If from a short distance, the wound often resembles that of a bullet; but in that case the body is certain to show a considerable amount of scorching from the gunpowder. If there is a complete absence of scorching or of powder-branding from the edges of the wound, "we can assume, with some degree of certainty, that the shot came from a considerable distance (more than four feet) and has therefore probably, or, according to circumstances, with great probability, been fired by another." But, Caspar adds, even in cases of indubitable suicide, he has missed "both of these criteria from the edges of the wounds," so that it is not absolutely certain, that, when a person shoots himself, and the weapon is therefore necessarily within four feet of the body, there should be always traces of burn on the edges of the wound. As regards a body already dead, the same thing has been remarked in the case of gunshot wounds, as has been noticed in the case of blows and fractures. "Bullets, half an inch in diameter," says Caspar, "fired from a common pistol against any bone, but particularly against the cheek bone, from a distance of only four or five feet, did not penetrate, but rebounded after contusing the soft parts." A bullet fired against the skull of a corpse remained sticking in the aperture, and caused no fissure in the bone, which was of the usual thickness. This is due to the great power of resistance of dead corporeal tissues, "and for this reason, gunshot wounds, even when purposely produced on dead bodies, can never for one instant be confounded with wounds similarly produced during life."

Cases of gunshot wounds are rare in Indian medical jurisprudence, but when they do occur, the question of premeditation may be settled by the distance from which the shot has been fired. It is manifest that a shot fired from a considerable distance could not have been fired in the heat of a sudden quarrel. It by no means follows that a shot fired from a short distance must necessarily traverse the body. This will depend to a great extent on the weapon, the strength of the charge and the capability of resistance of the part struck. In cases of persons who have committed suicide by putting the pistol into the mouth and firing it off, the bullet has been found lodged in the cranium.

A gunshot wound in the temple or the mouth is calculated to raise a presumption of suicide, but is not proof of it, for those parts might be selected by a murderer in order to avert suspicion. An interesting case of doubtful murder or suicide in gunshot wound has already been quoted (No. XXVII) with reference to the point of cadaveric spasm.

A blank charge, when fired from a short distance (two or three feet), often causes a wound like that of small shot owing to a number of the grains of the charge being unexploded.

There are several cases on record, in which the person shot at has been able, in a dark night, to distinguish the face of the assassin by the flash of the discharge. A judge in this country, however, would probably be very reluctant to convict on evidence of this kind otherwise unsupported.

Cut-throat.

This is by far the most ordinary method of causing death by violence in this country. The act is generally committed with a bill-hook or sickle, so that frequently the whole of the vessels of the throat and neck are divided. These wounds have been discussed under other heads, but as regards the question of survival with these injuries, see Illustrative Cases, Nos. XLIX to LII.

ILLUSTRATIVE CASES.

(Part I, Chapter V.)

XXXV.—In 1865 I rode in a steeple-chase. The horse was a very violent one, and in the middle of the course bolted. We got into a nullah of false earth. The horse plunged and then sank up to the knees, turning right over and cutting open her chest, so that she had afterwards to be shot. I was thrown on my head on a laterite rock, and was picked up insensible. This was early in the morning. I remained insensible for twenty-four hours and got up next morning perfectly well, but without the slightest recollection of what had happened the day before, or how the accident had occurred. The whole day was wiped out of my life. During the time of insensibility, which was caused by concussion of the brain, my ear, which, when I was picked up, was in my mouth, was sewed on, and when I awoke, I was astonished to find my head bound up. I appeared next morning at early tea, to the surprise of the rest of the residents of the house, who were all talking at the time of the probability of having to bury me.

Similar cases of partial loss of memory, or of "being knocked out of time," are not uncommon, and the behaviour of a person suffering from the effects of concussion, sometimes closely simulates that due to alcoholic intoxication.

XXXVI.—*Was the effusion on the brain caused by a blow or by excitement?*

A case was tried (Gloucester Summer Assizes, 1845), **Reg.** *v.* **Phipp,** in which the following facts were proved: During a fight the prisoner struck the deceased a severe blow under the left ear. He fell and died in a few minutes. After death blood was found extravasated on the part corresponding to the seat of violence, and this, in the opinion of the medical witness, satisfactorily accounted for death. The defence was, that the effusion might have been caused by over-excitement; but the judge (Patterson, J.) is reported to have said, that if it were proved that two people were fighting together,—blows were struck—one fell to the ground and died, and afterwards internal injuries were found corresponding with the external marks of violence, no power on earth could persuade him that such blows were not the cause of death. The prisoner was found guilty.—(*Taylor.*)

XXXVII.—*Cerebral hæmorrhage from a blow.*

The pole of a wagon in motion was said to have struck an old woman of sixty-five in the left side, and thrown her down on the pavement. She was picked up senseless, and died in a few hours. There was no trace of injury on the body. The cranial bones, of the unusual thickness of a quarter of an inch, were also uninjured. The cerebral membranes were, however, very strongly hyperœmic, and the whole brain floated, so to speak, in a layer of coagulated blood, two lines thick. It was decided that this cerebral hæmorrhage (so rare in its extent) could only have been caused by external violence, and that a headlong fall upon a stone pavement was a very probable cause.—(*Caspar.*)

XXXVIII.—*The brain injured by injuries to the face.*

In 1735 Macklin, the Comedian, was tried for causing the death of Thomas Hallam, by thrusting a stick into the eye. On inspecting the body, it was ascertained that the stick had entered the brain through the orbit.

In 1843 a boy killed another at Liverpool, by wounding him with a gimlet in the eye. The brain was perforated, and he died in two days.

A boy, aged ten, had the birch end of a common broom thrust several times into his face by one of his companions. He became stunned and was carried home in a state of stupor. He afterwards complained of violent pain in the eyeball and forehead. Symptoms of inflammation and fever supervened, followed by coma, convulsions and insensibility. He died in about sixteen days after the accident. On

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dissection, the orbital plate was found perforated, and pus and lymph were effused on the base of the brain. The left ventricle contained three ounces of pus; it communicated with a wound in the orbit. A small portion of bone was partially separated from the orbital plate and projected upwards.—(*Taylor.*)

XXXIX.—*Fractures of the skull.*

Chevers mentions many cases in which the skull has been fractured to pieces by blows and from pounding with a stone.

In 1852 three persons were sentenced to death, at Bareilly, for murdering a man, by beating him on the face with "*lattees* and an iron coulter," the bones of the head and face were shattered to pieces, so that even the jaws and teeth were broken into small pieces.

A woman was sentenced to death at the same town, for the murder of a girl of ten, for the sake of her ornaments. The civil surgeon found the poor child's face brutally wounded and beaten into a mass by repeated blows.

In 1856 a man was sentenced to death, at Masulipatam, for killing his wife. The quarrel was a very slight one, the judge says, "either connected with some ceremonies, in boiling water with two pots, one placed on the mouth of the other, or that deceased had allowed the marriage of their daughter to take place in the prisoner's absence." The prisoner drove the other persons out of the house, and attacked his wife with a rice-pounder, beating her so severely that the rice pounder "was found broken in three pieces around the body of deceased weltering in gore."—(*Madras Foujdaree Udalut,* 1856.)

Caspar also gives a case of a man who killed a shoemaker whilst at work, the object being to steal a pair of shoes. The prisoner confessed, that after giving the first stroke with the hammer, he became quite furious and felt as if he could keep on battering him for "ever." This confession entirely corresponded with what we found, *viz.*, four and twenty individual injuries of the head, extending even to the face.

XL.—*Murder of suspected sorcerers.*

In 1859, at Chingleput, two persons were found guilty of having murdered a man and his wife, whom they suspected of having bewitched them. The professed object was to beat out their teeth, which was done with slippers. The body of the man was found dead, the face and head being fearfully mutilated. The woman died shortly afterwards, and was also covered with wounds about the head and face. The evidence went to show that the deceased had been pounded with stones in addition to being beaten with slippers. Numerous other instances of this kind might be quoted, but this may serve as an example.—(*Madras Foujdaree Udalut*, 1859.)

XLI.—*Injuries to the spine, dislocation of the neck.*

This is a very usual way of causing death in this country, especially in the case of children. The neck is twisted and dislocated, causing laceration of the spinal cord. In 1860 a woman was condemned to death, at Combaconum, for murdering a child in this manner, for the sake of stealing his jewels. There were in this case no external marks of violence.—(*Madras Foujdaree Udalut*, 1860.)

Taylor mentions a case in which a man, who had been drinking, lay down to sleep in a yard intoxicated. Next morning he awoke sober, but could not move his legs. He was taken into hospital after twelve days, and died shortly afterwards. In addition to paralysis, he was suffering from peritonitis, and, on examination, the tenth dorsal vertebra was found broken in its body and arch. A large clot of blood was situated on the sheath of the cord; this had caused the paralysis. It was proved, that whilst intoxicated he had a fall, after which he walked home and lay down to sleep. Hence there was reason to believe that, in spite of the fractured vertebra, he had not been rendered incapable of walking. The effusion of the blood which caused the paralysis, could only have occurred some time after the fracture, as the result of slow oozing.

XLII.—*Torture.*

Dr. Chevers has collected an immense amount of information on this point. The practice of *Bansdola,* or compression and beating, has been alluded to in the text. A few cases only will be here cited in further illustration.

In 1854 certain policemen of Dinagepore were tried for torturing a man suspected of dacoity. The man died, and the civil surgeon stated "that death had been caused by congestion of blood on the brain from torture by severe pressure, and that simple beating without some such process, as *Bansdola,* would not cause the appearances he found without more decided marks." The judge considered it to be clear that beating was performed skilfully by sharp raps on the joints, and punching and poking with *lattees,* so as not to leave any external marks, and that the *Bansdola* torture was inflicted after he fell.

In this Presidency a common torture is, or rather was, by the Kittee (Telugu, Cheerata) in which the fingers are placed as in a lemon-squeezer; or by bending back the fingers over a stick; or by squeezing the ears, and also the breasts of females. These tortures are all done in such a way as to leave no external marks. Another mode of torture is tying up by the fingers; tying the arms and legs and rolling the body down an incline; lighting a fire beneath the soles of the feet, &c. Both of these last tortures were made use of in the case of the district moonsiff of Sholinghur, alluded to in the text, under the head of mutilation.

XLIII.—*False confession.*

Confessions obtained by improper means are naturally often false. The following is a peculiar case, and was tried before me at Cuddapah in 1884:—

A Mahomedan lad was charged with the murder of a boy of about ten years of age; the murder was accompanied by theft of a pair of silver bangles. The accused was last seen with the deceased about dusk going out to some prickly-pear bushes near the village. Next day the body of the deceased was found in a shallow pond among the bushes. There were marks of injury on the neck and head, and as the stomach contained muddy water, it appeared that he had been thrown in the water whilst still living. The bangles were missing. The prisoner was arrested on suspicion, and one of his feet was said to correspond with a footmark in the mud near where the body was found. The evidence regarding this, however, was not very satisfactory. This was all the evidence against the prisoner. He remained in police custody for three days, and then one morning, about half an hour after the *head constable had taken him to the latrine* for the purposes of nature, a constable came and reported that the prisoner was willing to confess. The sub-magistrate was then sent for, and the prisoner took them all to a spot near where the body was found, and from under a stone produced a pair of bangles. These bangles were exactly like any other bangles, with no distinguishing mark, but were sworn to by the deceased's father and by the goldsmith who made them. The whole case turned upon the identity of the bangles. Deceased's father swore that they had been made from Rs. 16 worth of silver, and the jeweller also swore that this was their weight when made. They were then weighed in court, and found to weigh only Rs. 15-8-0. They had only been made ten months before, and had been worn by deceased on two occasions for twenty days each. It was impossible that in forty days' wear there could have been a wastage of eight annas of silver, and therefore it was clear that the bangles produced by the prisoner could not have been the bangles worn by the deceased. The only possible explanation was, that bangles resembling those worn by deceased, were placed under a stone by some one else (police ?), and that then the prisoner was induced to confess and was told where the bangles had been concealed. In his confession (afterwards withdrawn), the prisoner said that deceased had fallen in by accident, and that he had then taken off the bangles and hidden them away because he was afraid. The prisoner was acquitted. It is exceedingly possible in this case that the prisoner was the murderer, but the story of the bangles was palpably false, and a false confession of this kind can only be accounted for in one way, *i.e.*, it was obtained by improper means at the latrine: there were, however, no marks of injuries on the accused.

XLIV.—*Injuries to the abdomen causing peritonitis.*

There are several instances of blows on the abdomen causing the above disease.

The following is from Taylor:—A soldier during action was struck by a spent ball on the abdomen over the region of the bladder. The ball fell on the ground at his feet, without either injuring his clothes or even marking his skin. He did not feel much pain at the time, and walked to the hospital, a distance of two miles, with the ball in his pocket, but he died shortly afterwards from peritonitis and inflammation of the bladder. The entire surface of the abdomen presented the appearance of a severe bruise in a few hours after he was struck.

XLV.—*Recovery from an incised wound in the abdomen.*

A soldier by accident so fell on his bayonet, that, although the weapon traversed the whole cavity of the abdomen, (entering at the back and coming out in front below the navel), the man recovered in six weeks.—(*Taylor.*)

XLVI.—*Death from a blow on the abdomen.*

Dr. Chevers quotes a case, in which a man who was said to have been struck with a thick pole on the right loin died immediately. No trace of injury or of grave disease could be discovered on the most careful examination. "I therefore reported that, as blows inflicted upon the front of the abdomen had been known, in several instances, to cause death by a shock to the nervous system, it was probable that, in this case like force applied to the side of the belly had acted in a similar manner.

XLVII.—*The same.*—Rupture from the blow or from disease?

Caspar gives the following case:—A Dragoon standing in the street was struck on the right side of the abdomen by the pole of a passing carriage. Three days subsequently he was seized with vomiting and violent pains in the abdomen, and died in nineteen hours, perfectly conscious and with all the symptoms of loss of blood. The medical man in attendance had not observed any trace of injury on the spot where the blow had been received. We found the body in June, already green, &c.; in the abdominal cavity there was about a pound of decomposed blood and intestinal contents, and the source of this extravasation we found to be in a portion of the small intestine lying on the left side, in which there was situate one of the well-known perforating intestinal ulcers, perfectly circular, three-quarters of an inch in diameter, surrounded by a kind of rampart of tolerably smooth everted edge, which was livid from putrescence. It was perfectly evident that this effusion had been the cause of death; and the history of the case, and the appearances on dissection, showed also that death had not resulted from the injury received, since it could not have produced such an ulcer, particularly on the opposite side, and if the blow had only completed the perforation of the ulcer, the symptoms which came on subsequently must of necessity have instantaneously presented themselves.

XLVIII.—*What was the cause of death?*

The following very typical case of a mysterious death occurred in Cuddapah in 1879, when I was acting as district magistrate:—

The tahsildar of S. had gone to a village to collect arrears of revenue. One of the ryots, on being brought before the tahsildar, was no doubt impertinent. The man seems to have been a quarrelsome fellow, and, the tahsildar said, made a threatening gesture. At all events, the tahsildar struck him with his stick and ordered him to be taken away, and whilst he was in the act of going, gave him a poke with the end of the stick in the *right* side. The man was taken to a tope in the village, and his hands were tied behind his back. Whilst seated on the ground, a gumastah, or clerk, passed by, and saying: What, are you the man who would strike our tahsildar? kicked him in the right side. The man fell over on his side and exclaimed 'ayo'! The man was kept there during the day and ate only a portion of the food brought him. In the evening he was marched off to the subsidiary jail, about ten miles off. On the way he twice was attacked with bleeding from the mouth and nose. The bleeding from the mouth had clots of blood. From the time of his arrival in jail he was ill, and refused food. He was groaning constantly, and on the following morning bled from the nose and mouth. For two days more he eat no food. On the fourth day he eat a little rice and pepperwater; and the fifth day he was insensible, and died on the morning of the sixth day. During this time deceased complained frequently of pain in the right side, breathed hurriedly and with difficulty, did not sleep and was always moaning. Directly he died, he was buried, and the death was entered in the jail register as one of fever. Just before his death, deceased had a few convulsive twitchings and an evacuation, otherwise he had been constipated. After complaint had been made, the body was exhumed, but was then described as being too decomposed to admit of a *post mortem* examination. The zillah surgeon, who was present during the enquiry, gave it as his opinion, that deceased had not died from rupture of any internal organ, such as the spleen, liver, or fracture of the rib; but, it being proved that he was a passionate man, had, in the excitement of the altercation, probably ruptured a blood vessel of the lungs, "which accounted for his bringing up blood by the nose and mouth, and subsequent congestion and sub-acute inflammation, and consolidation of the lung, aggravated no doubt by extreme mental anxiety, starvation and want of proper treatment. The kick on his right side could not, in my opinion, have ruptured his liver; if it did so, death would follow instantaneously. On the other hand, if it only injured the organ, the subsequent result would have been inflammation, which is invariably accompanied by jaundice, high temperature, tympanitis, diarrhœa, or obstinate constipation, and other acute and specific symptoms." It was also considered, that if a rib had been broken by the kick or the blow, deceased could not have walked ten miles, and if the kick had ruptured the spleen, death would have been instantaneous (?). Under these circumstances, as no Court would, in the face of this medical evidence have convicted of homicide, this charge was not pressed, and the matter was otherwise dealt with. The cases cited here, would seem to show that, with the exception of fracture of the skull,* and of course maiming of the legs, locomotion, even for a considerable distance, is possible with *almost any description of wound.* In this case the body was exhumed about fourteen days after the death, and it is somewhat difficult to understand why the decomposition should have been so considerable as to prevent an autopsy. Of course, in the first instance, all the subordinates had combined to hush the matter up.

XLIX.—*Cut-throat, recovery from.*

A rather singular case of this kind occurred in Madanapally in 1876. For the notes of the case I am indebted to Mr. Ward, the medical officer:—

On the 8th April a man, after killing his wife and another man, attempted to commit suicide. He was found by the medical officer about 3 A.M. lying on his back on a heap of rubbish, with his throat cut. "There was no hæmorrhage at the time, but he had evidently lost much blood, and was almost pulseless; he rallied after a while, and was removed to the hospital; * * * it was found that the larynx had been completely cut across at its upper part, and the pharynx divided, the cut extending so much on each side as almost to expose the main vessels (carotid, &c.). The parts were brought together with silk sutures, and nourishment administered per rectum. * * *. For a few days matters seemed to progress favourably, but it soon became evident that the man was sinking from want of sufficient nourishment and water. * * *. The sutures had cut through, and, except a slight healing and contraction of the wound, generally no effect was produced, the man was therefore fed through the wound, as attempts to pass a tube through the mouth caused a good deal of irritation. * * *. 3rd July.—Patient is in good condition; operated this morning by freshening the edges of the parts above and below, and brought them together by internal and external sutures; (enemata of milk, eggs and broth); * * *. 9th July.—The sutures have all cut through, but the wound does not gape as much as before. * * *. Attempts to bring the edges of the wound in the larynx together—after the cut in the pharynx had healed—caused much distress; it was only after tracheotomy was performed, and a tube kept in, that the wound in the larynx was partially closed after repeated operations. The man was able to speak with difficulty by closing the opening in his larynx with his fingers. In April 1877, twelve months after the attempt at suicide, he was sent to the sessions court at Cuddapah, where, on 5th May, he was tried and convicted for the double murder. Sentence—Transportation for life.

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* In 1883 a case was tried in October before Mr. C. A. Bird, acting judge of Chittoor; in which a man was found guilty of having killed his brother in a quarrel. Deceased's skull was fractured, and a portion of the brain protruded, and yet he was able to walk upwards of a mile to his house, where he died!

L.—*The same.*

Dr. Chevers quotes a case, in which a man, with the *carotid artery* divided, survived until the following day. "It appeared that a man was aroused in the night by two thieves, who were in the act of stealing in his house. In struggling with them, one of them cut him in the neck, and they escaped. After receiving the cut, he said that he had seen the prisoners, whom he named, stealing his *goor,* that he had seized one of them, and that the other cut him on the neck with a *dhao,* or knife, and both made their escape. The accused not having come with the neighbours, were sent for and confronted with the wounded man, who accused them as above. The man's brother stated that the occurrence happened late at night, and that it was then moonlight. The man died the *following day.* The civil surgeon's evidence was as follows: "I found an irregular deep wound on the neck, apparently caused by a sharp-pointed instrument; the wound, in my opinion, was not caused by the man's own hand; the *carotid artery was divided,* and deceased had bled to death." It is to be regretted in this case that it is not recorded whether it was the *external* or the *common* carotid that was divided. If it was the latter, Dr. Chevers says that this is the only recorded case of so long a survival; but Taylor (ed. of 1883) says: "There are several cases on record, which show that wounds involving the common carotid artery and its branches, as well as the internal jugular vein, do not prevent a person from exercising voluntary power, and even running a certain distance, for instance:—

LI.—*The same.*

In 1863 a man committed suicide, by cutting his throat. The external carotid artery and the jugular vein on the right side were cut through, and a large quantity of blood was lost. The wound extended from the front of the angle of the right jaw to near the windpipe, which was not wounded. The man survived half an hour, but was speechless and insensible.

LII.—*The same.*

In 1831 a woman received a wound whilst in bed, involving the right carotid artery, jugular vein, and windpipe. Her body was found in the next room, so that after receiving the wound she had got up from bed and had run about six feet.

LIII.—*The same.*

In **Rex.** *v.* **Danks** (Warwick, 1832,) deceased, after receiving a wound which divided the carotid artery, the principal branches of the external carotid, and the jugular veins, was able to go twenty-three yards and climb over a gate, the time required for such a performance being (as afterwards tested) from fifteen to twenty seconds.—(*Taylor.*)

LIV.—*Gouging out the eyes.*

In 1854 a very brutal case was tried at Mangalore, in which the paramour of a married woman, becoming tired of her or jealous, gouged out her eyes with a curved knife and a needle. The woman recovered.—(*Foujdaree Udalut,* 1854.)

Dr. Chevers gives a case of a man, who gouged out both the eyes of his wife with his fingers, and otherwise maltreated her, because she declined to have connection with him, being very young.

In Macnaghten's Reports, (Vol. II., 427), a case is given of a man, who, having tied the hands and feet of his wife, threw her down, sat upon her breast, and put out her eyes with a heated iron.

In the case of bodies found exposed in the fields or jungle, it should be remembered that the *eyes* are generally the parts first attacked by birds of prey.

PART II.

CHAPTER I.

ASPHYXIA.

UNDER this head are included all forms of death in which the act of respiration is primarily arrested; as, for instance, death from drowning, hanging, and suffocation.

Drowning.

The cause of death in drowning is the same as that in strangulation, and most of the internal appearances are therefore similar. In cases of drowning, fresh air is prevented, by the water which has been swallowed, from entering the lungs, and the blood in the lungs becomes imperfectly aërated. There is no longer any supply of oxygen, and the blood circulates in a state unfitted for the preservation of life. The action of the heart gradually slackens, until at last it ceases, and then the person asphyxiated dies. The action of the heart, however, often continues for some time after asphyxiation has taken place. It is only after all action of the heart has ceased that recovery becomes impossible. In strangulation the process is exactly the same. The ligature round the throat prevents the supply of fresh air to the lungs, and death follows in the same manner.

External appearances.

The goose skin, '*cutis anserina,*' is considered by *Caspar* to be a sure sign of death by drowning. This appearance, however, is only to be found when the body has been a few hours in the water, and when the inspection takes place immediately after its removal. When this contraction of the skin is found, it is strongly presumptive that the person must have been alive when he entered the water, but it must be remembered, as pointed out by Taylor, that this condition is met with after death from any sudden shock, *e.g.*, after death from hanging. In cases of drowning, the face is pale and calm, with a placid expression; the eyes are half open, the eyelids livid and the pupils dilated; the mouth closed or half open, the tongue swollen and congested, sometimes marked by the teeth, (Chevers and Guy say, rarely); and the lips and nostrils are covered with a mucous froth. Caspar speaks of a remarkable contraction of the penis in males who have gone into the water living, and states that he has not met with this same condition of that organ after any other form of death.

Abrasions and wounds are often found on bodies which have died from drowning. Abrasions may be caused by the person having come in contact with the bottom; or, in the case of wells in this country, by having come in contact with the stone sides. In the same way, wounds may be caused by any part of the body, especially the head, coming in contact with any hard substance whilst in the act of falling. A body found in the water with a wound on it, is naturally calculated to excite a suspicion of violence having been used, and very great caution should be used before giving an opinion that the wound was caused before immersion. The fact of the edges of the wound having commenced to contract, is not necessarily proof that the wound was caused before immersion, because this would be the case if the wound was caused in the act of falling, or at any time before or immediately after death. It will, to a great extent, depend upon the internal appearances as to whether it can be said that the wound was caused before, or in the act of immersion. If the internal organs present none of the ordinary appearances of death by drowning, and there is a wound in itself likely to have caused death, it would seem almost certain that the wound had been caused some time before immersion, and that the body was already dead when placed in the water. Of course, in the case of a stab or a gunshot wound, there could never be any doubt; but the case is different when there is a contused wound, say on the skull, which has caused fracture in itself likely to have caused death. It often occurs that the hands are found clenched and contain weeds, gravel, &c. This is a certain sign that the body came into the water alive.

A very important point to be observed in deaths by drowning, is the liquid character of the blood. This is held by some authors to be almost the only certain sign of death by this cause. This symptom, however, is not invariably found, and all that can be said of it, from a jurisprudent's point of view, is, that its absence, combined with the absence of other symptoms one would expect to find, is calculated to raise a suspicion of death from some other cause.

Internal appearances.

The lungs will be generally found greatly distended and filling the whole of the cavity of the chest. They will be flabby in appearance, and an impression made on them by the finger will be preserved. This is owing to their having lost their elasticity from being penetrated by water. They will be three or four times their ordinary weight owing to the same cause. On incision, a bloody frothy liquid escapes. The windpipe, *bronchi*, and the minute air tubes of the lungs will be filled with the same kind of mucous froth, but this appearance is not always met with, and depends probably upon the amount of struggles the deceased went through in his endeavours to breathe. Taylor says: "The presence of mucous froth in the air passages may be regarded as a characteristic of asphyxia by drowning. When discovered in the lungs, associated with a watery condition of these organs, it furnishes a satisfactory proof of this mode of death." If, however, the inspection is not made soon, *i.e.*, two or three hours after death, this froth may entirely disappear. It sometimes occurs that the contents of the stomach are found in the windpipe and lungs, which happens when the person has been drowned with a full stomach. Vomiting takes place, and the vomited matters are drawn into the lungs by the attempt to breathe.

The heart.

As a general rule, the right cavities of the *heart* are found to contain blood, while the left cavities are either empty, or they contain much less than the right. This, however, is not universally the case. Out of fifty-three inspections made by Ogston, the right cavities were found empty in two cases, and the left cavities empty in fourteen. There are other cases on record in which death was undoubtedly caused by drowning, but in which the right cavities have been found empty, or nearly so. Dr. Chevers has paid a great deal of attention to this point, and, after numerous inspections, arrives at the opinion, "that while in many cases the right auricle and ventricle probably contained more blood than is usual; in the generality of instances, where death is not attended with any distinct impediment to the circulation, there were certain hearts in which, quite apart from the effects of decomposition, neither cavity was at all remarkably full; and that there were several in which, the auricle being somewhat distended, the ventricle was well contracted, and contained no unusual quantity of blood." Where the inspection takes place several days after death, it is by no means unusual to find the right cavities empty. Dr. Taylor points out, however, that he cannot call to mind a case where the lungs have been found engorged as a result of asphyxia, and at the same time the cavities of the heart empty. Dr. Chevers says, "although in many cases of asphyxia the power of the right ventricle is overcome, and its cavity found gorged after death, there is a set of instances in which, the action of the heart continuing after the cessation of respiration, the right ventricle is found well contracted and nearly empty, the lungs being congested in an extreme degree." These facts should be carefully borne in mind by the medical man, when in the witness box, otherwise, after having given it as his opinion that death had been caused by asphyxia, in cross-examination it might be elicited that the right cavity had been found empty, and he might be called upon to explain how he accounted for such a statement, seeing that the generally received opinion is, that in death by asphyxia, the right ventricle of the heart is more or less gorged with blood. He should also remember, that the mere fact of the inspection having taken place many hours after death, is in itself sufficient to account for the empty state of the heart. For a very remarkable case of mistaken asphyxia, see Illustrative Cases.

The brain.

The *brain* is generally found gorged and congested in cases of death by drowning; but this also is not the invariable rule, and Dr. Taylor points out that the same degree of congestion is observed, not only in other cases of asphyxia, but also in the inspection of bodies where death has proceeded from various causes unconnected with cerebral disturbance. In the case of adult females, Mr. Semple found the cerebral vessels nearly empty (Chevers). In bodies found drowned, the vertebræ of the neck are often fractured. This may be the result of violence previous to immersion; but Dr. Chevers speaks of two unmistakeable cases which came under his experience, in which soldiers taking 'headers' in shallow water, struck the bottom and broke their necks.

Summary.

To sum up, Taylor states that "the internal appearances upon which medical jurists chiefly rely as proofs of death from drowning, are, first, water in the stomach; and, secondly, water with a mucous froth in the air passages and lungs. As regards water in the stomach, Dr. Chevers very rightly points out that its presence may be due to the deceased having drunk water shortly before he met his death. If the water is salt, and the body is found in salt water, this would not apply; or, if the water is of a peculiar kind, or contain weeds of the same kind as grow in the water where it was found, the presumption would be almost irresistiblo that the person had died from drowning. In the case of a body found in a well or tank of fresh water with only water in the stomach of a moderate quantity, say one pint, it by no means follows that death was caused by drowning. Water in the stomach, *together with* the mucous froth in the air passages and lungs, seems to be the only certain test; or, in the absence of water in the stomach, the mucous froth alone might be sufficient to cause a very strong presumption. The quantity of blood in the right ventricle of the heart varies so much, that absolute reliance cannot be placed upon any opinion formed from the absence or presence of blood. The same may be said of the brain; and suffusion of blood on the brain may have been caused by apoplexy, under the influence of which the deceased may have fallen into the water. As regards water in the lungs, a case is recorded of a boy who died from drowning, in which none of the visible signs, commonly attributed to drowning, were found, and there was no congestion of any of the viscera. As regards the mucous froth, it must be remembered, that, owing to exposure after having been taken out of the water, or owing to the incautious manner in which the body was handled, as, for instance, with the head downwards, liquid passing out of the lungs may have removed it. As regards external symptoms, great care should be taken in observing the hands when the body is removed, because the fact of their being clenched and containing grass, weeds or sand, may prove conclusively that the death occurred after submersion.

In the case of death before submersion, it is very rare that water finds its way into the stomach after the body has been placed in the water; but the absence of water from the stomach is not conclusive that death occurred prior to submersion. If, after submersion, the drowning man does not rise to the surface, it is exceedingly probable that little or no water will be found in the stomach. The water is swallowed when the person rises to the surface and gasps for air, but if asphyxiation takes place below the surface, it is quite possible that no water will be swallowed, since with asphyxiation the power of swallowing ceases. This has been ascertained from experiments made upon animals.

Accidental deaths and suicides.

The greater number of these deaths are of women, which is only natural, since they are the persons who draw water. It is also only to be expected, considering the extremely dangerous manner in which women and young girls are to be seen every day standing, poised on two out-jutting stones, and pulling up a heavy chatty of water, that there should be many accidents; but still, allowing for all this, there is little doubt that a great number of these reported accidental deaths and suicides are in reality murders. It would be a good thing if every district magistrate were to issue an order, that every case of accidental death or suicide, should be sent into the nearest hospital for *post mortem* examination. The following hint may be of value to village and police officers, whose duty it is to conduct the first local examinations. When a female deliberately commits suicide, she generally takes one end of her cloth, and, passing it between her legs, tucks the end into the part round her waist behind. This is done from feelings of modesty, lest when the body is found and taken out, her person should be exposed. This is a custom which has come to my knowledge in the Ceded Districts, and from enquiries, it is, I believe, prevalent elsewhere. At the same time it would be dangerous to lay down any rule with reference to the presence or absence of this sign. It might, however, serve as a clue for further enquiries. When bodies are found tied hands and feet, or when a heavy weight is attached, a suspicion at once arises that death is due to violence. But even in this case no rule can be laid down, because there are two recorded cases of indubitable suicide, in which the deceased, one of whom was a good swimmer, themselves tied their hands and feet so as to insure speedy death. In a case of this kind, the first thing that should be done is to examine whether the knots could have possibly been tied by the deceased's teeth. As regards almost all the symptoms of drowning, it may be said that it is almost impossible to lay down a hard and fast rule regarding any one of them. The great thing to be ascertained is, whether the death was caused by, or previous to, the immersion.

Percentage of unmixed asphyxia in cases of drowning.

Devergie, whose experience in cases of drowning is very large, says, that the cases of unmixed asphyxia are as two in eight (25 per cent.); the cases in which no traces of asphyxia exist, as one in eight (12½ per cent.); and the mixed cases as five-eighths (62½ per cent.). In cases of pure asphyxia, death has been caused by immersion only; in cases where there are no traces of asphyxia, death must have been caused previous to immersion; but even these cases may not be due to criminal violence. A person might be seized with apoplexy and tumble into the water dead, or a person accidentally falling into a well from a height might fracture his skull so as to cause instantaneous death before he reached the water. These cases are rare (though an instance of the latter occurred to a friend of mine), and it may be safely said, that when a body is found in a well, with no traces of asphyxia, a very grave suspicion of murder having been committed, arises. In the remaining 62½ per cent. of cases, the causes of death are due partly to asphyxia and partly to other causes, such as disease or injuries. The body of a person who had fallen into the water in a fit, would probably show traces of both apoplexy and drowning, and in the same way, a person injuring himself in the act of falling, would probably die, not only from the injuries received, but also from asphyxia. Where injuries are found, it should be carefully noted whether such injuries could have been caused in the fall. As regards the attacks of fishes and crabs on a dead body, European authorities state that they seldom attack a body until decomposition has set in; but Dr. Chevers asserts the contrary. Careful notes should be taken of such marks, for I remember one case, in which the ear was missing on a body found in a well, and it was urged at the trial, that this might have been bitten off by crabs, &c. The medical man had omitted to take any notes of the appearance of the edges of the wound, so that it was impossible to arrive at any decision on this point.

Whilst this book was passing through the Press, I wrote the following article for the *Madras Times* with reference to the subject of accidental deaths. It is reprinted here by the kind permission of the editor:—

"During the year 1883, there were in this Presidency 1,105 cases of suicide by drowning; 5,880 accidental deaths from drowning; and 2,318 deaths from snake bite and wild beasts. These figures give a total of 9,303 deaths. It is stated in the Administration Report for 1882-83, that the loss of life from wild animals was 139, and as this appears to be the average annual number, it may be fairly assumed that at least 2,160 of the deaths were reported as having occurred from snake bite. In 1883 the total number of deaths was 541,930, so one death in every 58 occurred from suicide, accidental drowning, or snake bite. Now snake bite is a cause of death, which it is very easy to assign, and, as probably in 9 cases out of 10, the body is not sent for medical examination, it is not possible to disprove it. If, however, snake bites are excluded from the calculation, there were 6,985 deaths from drowning alone, either accidental or suicidal, or one death in every 77 was reported as having happened from one of these two causes. It seems almost incredible that so large a proportion of deaths should be due to these causes only. On examining the figures of drowning more closely, it appears that out of the accidental deaths from drowning amongst adults, the proportion of females to males is as 3 to 2; amongst children, the proportion of females to males is about equal, the males being somewhat in excess; again, by dividing the deaths between adults and children, almost one-half of the deaths are found to be of children. That the proportion of females is greater than males can be understood, because females are principally employed in drawing water from unfenced wells, and the excess amount, or about 600, is probably due to this cause. But why is it that the remainder, *viz.*, about 1,000 of each sex are accidentally drowned, and why is it that there are so many children drowned, who certainly are not so much employed in drawing water as adults? There is reason to fear that a large proportion of these reported accidental drownings and deaths from snake bite are in reality murders. Dr. Chevers, in his work on medical jurisprudence, says: 'The latter gentleman (Mr. Alexander) informed me that when he first went to Chumparun, he was astonished at the number of persons reported daily to have died from drowning. The persons so dying were principally women and female children. It struck him as suspicious that so many should be carried off daily in this manner. He therefore issued positive orders that all bodies should be brought in for *post mortem* examination; upon this, the reports decreased wonderfully. He believed that many of the persons reported to have died in this manner had been made away with.' In another place he also mentions that a police superintendent having adopted the same tactics in two different districts, it was found that a large proportion of deaths reported to be accidental were, on examination, found to be murders, and convictions were subsequently obtained.* A general order of this kind seems to be required in this Presidency. Ten years ago it would probably have been impossible to carry such an order out, but now that dispensaries are being established in almost every taluq town, it is feasible, for there is, generally speaking, a medical man within fifteen to twenty miles of every village. At present, it is left entirely to the village punchayets to decide as to the cause of death. These punchayets are formed of ignorant villagers, many of whom may be perhaps interested in hushing up what is the result of domestic quarrels. In 1862, Native Surgeon Ruthnum Moodelly wrote as follows in the *Madras Quarterly Journal of Medical Science* :—' They performed their temporary duty very reluctantly, pay no attention to the proceedings at the inquest, and are glad to get rid of a vexatious task by finding any verdict they please.' If there is no medical opinion available, the proceedings are often made use of to extort money. If a crime has occurred, the guilty parties probably have to pay smartly for hushing it up, and the profits are shared by the police and the village magistrates. It may be urged, that to send all bodies to the hospital, would be to expose the apothecaries to temptation. This, of course, is true; but, on the whole, the decision would be safer in their hands than in those of the villagers. Mr. Malabari, in his recent eloquent appeal regarding the remarriage of widows, points out how often the career of a virgin widow ends in shame and crime, and it is to be feared that many a domestic scandal is hushed up by the ' accidental' death of the guilty party. Truth, it is said, is at the bottom of a well, and if she would only reveal the secrets she sees down there, the curtain would be raised over many a tragedy.

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* In the one district seventy-seven prisoners were subsequently charged with murder of thirty-seven persons, whose deaths had been reported as accidental; and in the other, out of fifteen deaths reported as accidental, ten were proved to be murders !

"From the last Administration Report, however, we gather that the actual loss of life from wild beasts was only 139. In calculating the number of snake bites for the districts, we have therefore allowed an average of 100 to each of 19 districts. Madras city and the Nilgiris we have omitted, as the circumstances there are exceptional, and Bellary and Anantapoor are taken together. Adding, therefore, 100 on account of snake bites to the accidental deaths and suicides by drowning only, we arrive at some very surprising results. The districts seem to fall into three groups. In the first of these are Vizagapatam, Nellore, Cuddapah and North Arcot; and in these districts one death in every 30, 30, 33 and 40 respectively, has been ascribed to one of these three causes. In the next group there are ten districts, *viz.*, Ganjam, Godaveri, Kristna, Bellary, Chingleput, Madura, Canara, Salem, Coimbatore and Kurnool, where the deaths from these causes range from 1 in 47 to 1 in 56. In the last group there are only five districts, *viz.*, S. Arcot, Tanjore, Trichinopoly, Tinnevelly and Malabar, where the proportion of deaths from these causes varies from 1 in 64 to 1 in 128 of the total deaths from all causes. Now it is rather remarkable to notice from these figures that in those districts which most abound in water and wells, the deaths from drowning are of less frequent occurrence than in the inland districts. As regards snakes, we fancy that in reality pretty nearly every district is the same, but we find a very remarkable difference in the figures reported. Unfortunately, deaths from wild beasts are lumped together with snake bite, though probably in some districts, such as Chingleput, Tanjore and Trichinopoly, there are very few deaths from wild beasts. In Chingleput 95 deaths are reported, in Tanjore 185, and in Trichinopoly 169, whilst in S. Arcot there are no less than 200. In Ganjam, Vizagapatam and the Godaveri, where there should be a large number of snakes and wild animals, only 68, 67 and 87 deaths from this cause are reported. In Cuddapah there were 132, and in the neighbouring district of Bellary there were, over a larger extent of country, with about the same population, only 73 deaths. The difference between Cuddapah and Bellary, as regards deaths from drowning and suicides, is also remarkable, when it is remembered that the circumstances of both districts are very similar. In Cuddapah in 1883 there were 382 accidental and 89 suicidal deaths, whilst in Bellary there were only 240 and 70 respectively. In every district the accidental deaths are greatly in excess of the suicides; but it is remarkable, that in the thickly populated districts, the suicides are far less than in the poorer ones, where the population is thinner. Thus in Tanjore there were only 4 suicides, but 249 accidental deaths from drowning; in S. Arcot 21 and 294; in Trichinopoly 12 and 246; and in Malabar 16 and 386 respectively. The highest number of suicides is reported from the Godaveri, Kistna and Coimbatore districts, where there were 122, 107, and 106. Another strange thing is, that whereas in most districts the figures are pretty nearly the same one year after another, in others there are most extraordinary variations. For instance, in N. Arcot there were, in 1882, no less than 641 accidental deaths from drowning, whilst in the following year there were only 528. In Coimbatore, on the other hand, there were 368 deaths from the same cause in 1882, but 436 in the next year.

"When the figures of the up-country districts are compared with those of Madras city, we again find some striking differences. Whereas in Madras the proportion of accidents and suicides to the population is at the ratio of 1 in 8282, in almost all the districts the average ratio is far greater. Tanjore alone is somewhat better than Madras, the ratio there being 1 in 8420. Ganjam comes next with 1 in 7776, but we cannot help suspecting there must be something wrong in the reports of this district, for all the rest are far behind. The worst is Cuddapah with 1 in 2167, and Nellore and Coimbatore come next. These figures go to show that there is grave reason for supposing that a large number of the reported accidental deaths, suicides and snake bites are in reality homicides. Steps should be taken to sift this question thoroughly."

Accidental Deaths in Madras.

District.	No. of accidental deaths, suicides and drowning.	Population.	Ratio of deaths per population.	Ratio of deaths, accidents and suicides per total deaths from all causes.	The same including snake bites at the rate of 100 per district.	Deaths from all causes.
			one in	one in	one in	
Madras City ...	49	405,840	8282	320	...	15,078
Ganjam	225	1,749,604	7776	69	48	15,688
Vizagapatam ...	377	2,159,939	4864	37	30	16,052
Jeypore	56					
Godaveri	446	1,755,856	3936	58	47	25,951
Kistna	383	1,548,480	4584	76	60	29,234
Nellore	424	1,220,236	3035	37	30	15,185
Kurnool	182	709,305	3897	69	45	15,078
Cuddapah... ...	471	1,121,038	2167	40	33	12,628
N. Arcot	570	1,817,814	3184	47	40	18,947
Chingleput ...	309	981,381	3093	62	46	19,195
S. Arcot	315	1,814,738	5780	107	84	33,833
Tanjore	253	2,130,383	8420	174	128	44,097
Trichinopoly ...	258	1,215,033	4709	98	71	25,436
Madura	330	2,168,680	6416	63	48	24,402
Tinnevelly ...	401	1,699,747	4211	80	64	32,434
Salem	432	1,599,595	3700	58	47	25,180
Coimbatore ...	542	1,657,690	3058	59	48	28,047
S. Canara... ...	283	988,165	3490	68	50	19,469
Malabar	408	2,433,122	5855	127	107	51,395

(*N.B.*—In the above calculations decimals are omitted.)

ILLUSTRATIVE CASES.

(Part II, Chapter I.)

LV.—*Mistaken case of drowning.*

Dr. Chevers gives the following remarkable case of mistaken symptoms, which show how cautious a medical man should be before committing himself to an opinion. Dr. Woodford, at Calcutta, made a *post mortem* examination of the body of a European sailor at the police dead-house. He found the clothes saturated with water. Sanious froth was round the nostrils: the hands were somewhat soddened, but the boots, which were wet, had preserved the feet. It was twenty-four hours after death, and decomposition was advancing rapidly. The skin was vesicated, and the body covered with particles of sand. The vessels of the brain and the right side of the heart were engorged with blood. The lungs and other viscera were highly congested. He certified that deceased died from submersion in water. The coroner returned the certificate for explanation, as the police reported that the deceased had died in the police lock-up from apoplexy. The clear explanation was, that the body had been carried from the lock-up to the dead-house, a very small godown, with open windows, only three feet from the ground. It was placed on a table under a window on the west side; rain had fallen in torrents all night, and the wind blew from the west. Dr. Woodford found the body on a table in the centre of the room. The clothes were, as we have seen, saturated; and the body was covered with particles of sand. (Dr. Woodford observes that, in Bengal, drowned bodies, which have not been disturbed, are invariably covered with particles of fine sand.) The sand had been driven on to the body by the rain from the loose plaster at the upper part of the window cornice. Dr. Chevers remarks: "Thus all the usual external appearances of drowning presented themselves, and the internal morbid appearances were simulated by those of apoplectic death." It seems, however, that in this case two important internal symptoms were wanting, which should have led Dr. Woodford to make further enquiries, *viz.*, the absence of any water in the stomach or lungs, and the absence of mucous froth in the lungs or air vessels. If a person had been drowned and had presented the internal symptoms recorded, it is exceedingly improbable, though not impossible, that there should have been no water in the stomach and lungs, and no mucous froth in the air vessels. The fact of mucous froth round the nostrils, should have shown that the water could not have escaped from the stomach, and cleared the air vessels, by rough handling of the body. The above case is very interesting as showing what care is needed in a *post mortem* examination of bodies found drowned, and how little confidence can be placed upon the symptoms.

LVI.—*Another doubtful case.*

Caspar gives the case of a man found drowned ten weeks after he had been missed. He had gone to discharge some rent due, and the receipt was found in his pocket, but a document, which it was known he had taken with him, was missing. The body was of course extremely putrefied, the eyes staring, and the tongue firmly wedged between the teeth. On the left side of the throat there was a whitish depressed mark, two lines broad. The lungs were much distended: left side of heart empty, and the right filled with blood rather dark and treacly. The trachea still contained a small quantity of bloody froth. No water was found there, or in the lungs or stomach. The brain had become converted into a bloody pap, and could not be examined. The skull bones, however, were uninjured. The duodenum and œsophagus were chemically examined, but showed no trace of poison. "We gave it as our opinion (1) that deceased had died from asphyxia; (2) that it was possible, and indeed probable, that this had been occasioned by drowning; (3) that the high degree of putrefaction in which the body was, prevented any certain conclusions being drawn from the mark found upon the neck; (4) that, supposing death to have been caused by drowning, it cannot be determined, with any degree of probability, whether it has been a case of homicide, suicide, or accident."

After several months the missing document was found, and further judicial investigations placed it beyond doubt, that in this case the death from drowning had been suicidal.

LVII.—In the following case, quoted by Caspar, of an epileptic, who was found drowned with his face in a shallow turf-pit, we give, as an example, the *verbatim* minute of the examination. This is a document upon which, in Germany, great stress is laid, and the document itself will show with what care the examination was conducted, and how every point of importance is touched upon:—

A. External Inspection.

(1.) The body is five feet five inches in length, apparently about forty years old, well-nourished; has an abundance of light-brown hair, the eyes are blue, and the tongue lies behind the teeth. The tongue is covered with mud, particularly towards its point.

(2.) *Rigor mortis* does not exist.

(3.) The colour of the body is the usual corpse colour, only the abdomen is green from putrefaction, and the whole countenance red from *post mortem* staining, proved to be such by incisions.*

(4.) About the middle of the forehead there are two spots situate one above the other, of a reddish-brown colour inclining to yellow, hard to cut, roundish in form, and about three-quarters of an inch in diameter. Incision through these spots brought to light no extravasation of blood.

(5.) The ridge of the nose displayed the same condition already described under No. 4.

(6.) The posterior surface of the upper extremities, several parts of the face, also the back of the body, are soiled with mud.

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* The deceased was found dead, lying on his face, and with it half immersed in a shallow, muddy puddle close to the bank.

(7.) The hands and feet are bluish, and both, but particularly the former, display longitudinal corrugations, especially on the fingers.

(8.) The skin on the inferior extremities, and on the right arm, displayed the condition termed *cutis anserina.*

(9.) No foreign bodies are found in the natural cavities, with the exception of some mud removed from the fauces.

(10.) At the external angle of the left eye, after removal of the mud, a dark bluish-red coloration of the upper and under eyelids became visible, which, when incised, betrayed a trifling extravasation.

(11.) The neck and sexual parts are natural, and there appears nothing else to remark on the external surface of the body.

B. Internal Inspection.

I. *Opening of the Cranial Cavity.*

(12.) The soft parts covering the cranium display nothing unusual. The skull-bones are uninjured, and are of the unusual thickness of three lines.

(13.) The vascular meninges display a visible, but not extraordinary, degree of congestion.

(14.) The brain is firm, but not much congested.

(15.) The lateral ventricles are tolerably well filled with serum, the choroid plexuses tolerably congested.

(16.) The cerebellum is quite normal.

(17.) This is also the case with the pons Varolii and the medulla oblongata.

(18.) All the sinuses are much congested.

(19.) The *basis cranii* is uninjured, and there is nothing else to remark in regard to the cranial cavity.

II. *Opening of the Thorax.*

(20.) All the organs are in their natural position. The right lung is partially connected to the ribs by means of old adhesions; both lungs are darker in colour than usual, completely filling the thoracic cavity and are very full of blood, without being excessively so. There is no water in the lungs.

(21.) The large blood-vessels are also not unusually congested.

(22.) In the pericardium there is the usual quantity of fluid. The coronary vessels of the heart are very strongly congested, and the right side of that organ is turgid with dark and perfectly fluid blood, while the left is empty.

(23.) The trachea and larynx are empty and in no respect anormal; muddy mucous flows downwards from above during the examination.

(24.) The œsophagus is empty.

(25.) In the left pleural cavity there are about three ounces of bloody fluid.

III. *Opening of the Abdominal Cavity.*

(26.) All the organs occupy their natural positions. The stomach is full of a greenish-yellow watery fluid, in which the remains of food and some mud can be recognised, in other respects it is normal.

(27.) The pancreas is normal.

(28.) The liver is strongly congested with dark fluid blood, the gall-bladder is full.

(29.) There is nothing remarkable about the spleen.

(30.) The mesenteries and omenta are very fat.

(31.) The kidneys are much congested.

(32.) In regard to the intestines, we have only to remark, that the large one is full of fæcal matter.

(33.) The urinary bladder is empty.

(34.) The *vena cava ascendens* is tolerably distended, with dark fluid blood.

At the close of the dissection, the medical inspectors gave it as their opinion :—

(1.) That the deceased had died from apoplexy of the heart and lungs.

(2.) That death had occurred in a muddy fluid.

(3.) That the deceased must, therefore, have been alive when he fell into the water.

(4.) In answer to a question: the ecchymosis of the left eye described under No. 10, is not to be regarded as a cause of death.

r. *a.* *s.* *
(Signed) Casper. (Signed) Lütke.
a. *u.* *s.* †
Jordan. Bidault. ‡

The *report* of the examination is, in Germany, a different document, and contains the opinion of the doctors, based on the facts elicited by the examination. We give *in extenso* the report of the same case:—

Medico-legal report in the matter of the inquiry respecting the mode of death of H.

H. 3. 52.§

"In conformity with the directions of the Royal District Commission of Charlottenburg, dated the 5th of this month, and referring to the above-mentioned inquiry, we have the honour to transmit to you the following document, constituting the medico-legal report required."

"According to report,|| H., who had been for many years afflicted with epilepsy, disappeared upon a certain day, his body being soon thereafter found lying close to the bank of a turf-pit near Charlottenburg; he was reported to have been robbed, and therefore a medico-legal examination was rendered necessary. The dissection was performed by the subscribing medical inspectors, on the 26th of March, with the following results":—

A. External Examination.

(Here follows, word for word, the report of the anatomical appearances as given above, to which is added the following opinion:)

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* Read over—approved—signed. The German letters are *v. g. u.*:—Vorgelesen, genehmigt, unterschrieben.

† *Actum ut supra.*

‡ These are the signatures of the legal official present, and of the sworn clerk who drew up the minute.

§ The reference numerals of the corresponding documents.

|| In this case no documents were given us, only a copy of the minute of the dissection.

"In our provisional opinion we have assumed as probable that the deceased had fallen into the water alive, and therein met his death, that he consequently was drowned, and we must still maintain this view. For not only were the signs of every other species of unnatural death awanting, since the trifling ecchymosis described under No. 10, being in no way connected with any important organ, could have had no influence whatever in producing death, and the marks upon the forehead and nose (mentioned under Nos. 4 and 5), were very probably made after death, and were at any rate of no importance whatever; but the results of the dissection also revealed the existence in the body of most of the appearances usually found in those drowned. Amongst these, medico-legal experience enables us to reckon the bluish coloration and wrinkled condition of the skin upon the hands and feet (7)—which of themselves, however, only prove that the body must have lain some time in the water—the so-called *cutis anserina*, which was quite distinct in certain parts of the body (8), the mud found in the fauces (9); and along with those external appearances of the body, the *corresponding* internal ones, which, taken together, are extremely demonstrative—*viz.*, the visible congestion of the cerebral membranes (13), and of all the cerebral sinuses (18), the congestion of the lungs (20), of the coronary vessels of the heart, and of the right side of the heart itself (22); the remarkable distention of the lungs (20), the congestion of the liver and kidneys (23 and 31), and the fluidity of the blood in the body generally (22 and 34), which, as well as the appearances found in the stomach, must be regarded as particularly important symptoms. The stomach was distended with a watery fluid, in which were distinctly visible isolated particles of mud (26), precisely similar to that which we found upon the tongue and in the fauces, from which it incontestably follows that the deceased must have swallowed after falling into this muddy fluid; must, therefore, have been alive, since water cannot flow into the stomach after death; consequently, it cannot possibly be supposed that the deceased was already dead when he fell into the water; and this view is also supported by the other existing appearances symptomatic of death by drowning. The deceased has in fact died from apoplexy of the heart (asphyxia), like a great many of those that die in the water, has consequently been drowned. Had we been asked whether the deceased had committed suicide, or met with his death accidentally or by the fault of a third party, we must have stated, that the dissection revealed neither proof nor probability of there being any third party criminally concerned with the death (by violently throwing the man, while still alive, into the puddle); while, contrariwise, it is a most probable supposition that H. met with his death in the water by suicide or accident, having been suddenly seized with an epileptic fit, for instance, while standing by the edge of the water, and so fallen in and been drowned. Should it really be found, which we know not, that the deceased has been found robbed, and close to the bank, this would in nowise militate against our view; for it is self-evident that nothing could be more likely than that a third party, seeing the body floating in the pool or lying near its bank, should drag it ashore and plunder it.*

"We accordingly declare it to be our opinion, that H. has fallen into the water alive, and died in it from drowning.—Berlin, 19th April 1852.

"Casper. "Lütke, *chir. for.*
(Official seal.) (Official seal.)"

LVIII.—*Death from drowning caused by epilepsy.*

Ogston gives a case of a man who was seized with an epileptic fit whilst leaving a privy, and fell with his face in a piece of dirty water, which did not exceed a foot and a half in breadth, with a depth of only three or four inches. Another case is quoted by Taylor, as given by Devergie, in which a man was found drowned in a small stream, his face towards the ground and his head just covered by water, which was not more than a foot in depth. On dissection, there were all the appearances of drowning present, and a large quantity of sand and gravel was found occupying the windpipe and smaller air tubes.

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* It afterwards appeared, that there was not the slightest trace of any crime committed on the drowned man. What might not, however, have been made of this case in the medico-legal report, by means of a few judicious doubts and forced interpretations!—(*Note by Dr. Caspar.*)

LIX.—The following case is from Chevers, and shows how the nature of the water, and substance found in the stomach may lead to the detection of crime:—The body of a child was found in a tank at a considerable distance from his own house, and suspicion was naturally excited that he had been conveyed thither and made away with. Dissection afforded clear evidence of death from drowning: the fauces, larynx and trachea contained small portions of green vegetable matter, and the right bronchus was almost completely filled with so large a portion of an aquatic weed, doubled together, that it appeared astonishing how any such body could pass the *rima*. It was afterwards proved distinctly that no weed of the kind grew in the tank where the body was found. Further enquiry led to the discovery that the boy's body had been found by a woman in a tank near his home, in which the weed, lodged in the air passages, grew abundantly. This female had conveyed the corpse to the more distant tank which belonged to a person against whom she bore a grudge.

CHAPTER II.

HANGING AND STRANGULATION.

Cause of death.

When death is caused by hanging, it is the weight of the body which is the constricting force; but in strangulation the constricting force is due to some other cause. If the constricting force is so great as to prevent any air reaching the lungs, death results from asphyxia; if, however, owing to the looseness of the cord, or its position round the neck, a small quantity of air can reach the lungs, then death is caused, not by asphyxia, but by interruption of the circulation of blood to the brain, owing to the compression of the great vessels of the neck. In this case apoplexy is the immediate cause of death. Of course, in a great many cases, death may be caused by a combination of both asphyxia and apoplexy.

Apoplexy or asphyxia.

The following table, given by Taylor, shows the results at which Caspar and Remer arrived from the examination of a large number of cases:—

	Remer.	Caspar.
Apoplexy	9	9
Asphyxia	6	14
Mixed conditions	68	62
	83	85

In cases of judicial hanging, it often occurs that the vertebræ of the neck are dislocated; but it has been observed by Hammond, an American writer, that any extra violence used for the purpose of causing this dislocation, is wrong, useless and barbarous. The dislocation does not cause death, and only inflicts unnecessary pain. In hanging, death being caused by asphyxia, or apoplexy, or both, the object should be to produce immediate asphyxia, by adjusting the noose, so as to close the windpipe at once. Hammond considers that the most effectual way is to adjust the rope whilst the criminal is standing, and then to raise him from the ground. In the case of persons weighing under 150 lbs., he recommends that a weight should be attached to the feet, so as to insure sufficient traction of the cord.

Mark of ligatu on the neck.

It is commonly considered, by persons who have not studied the subject, that in cases of death by hanging, there must necessarily be a strongly developed mark of the ligature round the neck. This, however, is by no means the case. In cases of judicial hanging, where much violence is used, the mark of the ligature may be found, and there is often ecchymosis of the neck; but in suicidal hanging there is often no mark at all to be found. Out of seventy-one cases examined by Caspar, there was no mark whatsoever in fifty. On the other hand, Caspar has found that the mark round the neck can be produced by suspension after death. The conclusion generally arrived at is, that it is rare to find ecchymoses in the mark on the neck, and Caspar considers that it is nothing more than cadaveric appearance, and that it may become livid or dark-coloured after death, just as lividity appears in the dead body during the act of cooling. The presence or absence of a mark round the neck is therefore no proof, one way or the other, of hanging having taken place during life.

Hanging usuall due to suicide.

By far the greater number of cases of hanging are the result of suicide, because so much violence is necessary in hanging, and so much opposition may be expected from the victim, that a murderer does not often have recourse to this means of causing death. But because hanging is often the result of suicide, it frequently occurs, especially in this country, that persons are first killed, or rendered unconscious, and then hung up, so as to create an impression of suicide. If, however, a body were found hanging with marks of violence, such as blows or wounds, on it, it would at once be suspected that the case could not be one of suicide. Hence, if a murder has been committed, it will generally have been caused by suffocation or strangulation first of all. If a person has first been strangled, and then hung up, it follows that the internal symptoms will be exactly the same as they would have been had death been caused by hanging. It is therefore chiefly from the external symptoms that an opinion can be formed. Bearing this in mind, it is of the most absolute importance that, when the body is first discovered, every sign and symptom should be carefully noted. If the body is in a room, the size of the room should be carefully measured; the position of the body, with reference to the walls, the length of the rope, the nature of the knots, the state of the hands, any marks on the clothes or the body, &c., &c. A very remarkable case occurred within my experience as magistrate at Combaconum in 1882. A high priest of a *mutt*, a person of very great sanctity, was found hanging in a cell in the *mutt*. He was in the habit of sleeping alone inside the building, and when found, the outside doors were all locked from the inside. Access could only be obtained by climbing over the building and getting into the open courtyard in the middle. The *mutt* was at a village called Suriyana Kovil, about nine miles from Combaconum. The body was taken down, and the apothecary from Combaconum was sent for. He came, inspected the body, and, finding no marks of injury, certified that death had been caused by hanging, and that, in his opinion, the case was one of suicide. No internal *post mortem* was held. The body was buried, as is usual with persons of the deceased's position, in salt. Owing to various causes, suspicion fell upon certain persons. There was apparently no cause for suicide, except the allegation, that finding certain seminal marks on the front cloth, it was supposed that deceased was suffering from a venereal complaint, and hanged himself from shame. It was also alleged that he was pecuniarily embarrassed. On the other hand, there had been a long-standing quarrel between deceased and a rival *mutt*. Deceased was found dead just on the eve of a big festival, to which he had invited a number of persons, and at which an important ceremony was to be performed. Immediately after the death, the people from

Points to be noted.

Suriyana Kovil case.

the rival *mutt* took possession of deceased's property and cloister. Sixteen days after death the body was exhumed in the presence of the zillah surgeon, the superintendent of police, and myself. It had been buried in very marshy ground, and, in spite of the salt, was in a very advanced state of decomposition. Almost the whole of the outer cuticle had peeled off. There were some livid marks on the fore part of the legs, on the chest, and on the inside of the hands. There was scarcely any mark round the neck. The deceased was a tall, stout and well-made man, weighing about 12 to 13 stone. No internal examination was possible. No notes had been taken of the exact position of the body at the time it was found; the cord, however, had been preserved. A lengthened enquiry took place, and the following facts were elicited:—The body was found hanging from a bamboo, the ends of which rested on a cornice of the wall which ran round the top of the cell. It was hanging from the middle of the bamboo, and was therefore in the middle of the room. A ladder was found resting against the wall, and the deceased was supposed to have got on to this ladder, tied the noose round his neck, and then to have thrown himself off. The cell was eight feet broad, and the length of the rope, between the neck and the bamboo, was a cubit or two feet. The middle of the bamboo would therefore be four feet from the side where the ladder was standing, and, from the position shown, it would have been impossible for a man standing on it to have tied a rope round the bamboo and then round his neck, without leaving a greater extent of rope than one cubit. Again, to show that it was a case of suicide, the witnesses, who found the body, said, that before committing the act, deceased had smeared his hands and fingers with holy ashes, of which there was a box in the room at some distance from the corpse. This was supposed to be a last act of devotion, such as is customary just before the death of a person of sanctity, and showed deceased's intention to commit suicide. But it was clear, that if deceased smeared his fingers of his own act, he must have done so before hanging himself, and if so, it would have been impossible for the ashes to be found, as described on his fingers, after death, because the very act of tying the knot round the bamboo and round his own neck, would have rubbed them off. It was clear that the ashes must have been smeared on the fingers by some third party after death. Eventually a man confessed to having taken part in the murder. The way it was done was as follows:—The prisoner was a servant of the deceased, and said, that two other men belonging to the rival *mutt* talked him over and arranged to commit the crime. On the night in question, deceased was sleeping in one part of the building, and the servant in another. At a given signal, the servant opened one of the doors and let the accomplices in. They then went to where the deceased was sleeping. One man got on his chest and stuffed a ball of cloth into his mouth, and compressed his throat with the other hand; the second sat upon his legs, and a third held his hands. After all struggles had ceased, they fetched a bamboo and a ladder, hung deceased to the bamboo, and then placed it on the cornice with the ladder by the side. They then smeared the hands with ashes, and two of the murderers went out. The third locked the door from the inside, and then climbed over the roof and got away. The prisoners were committed to the court of sessions; but, as very often happens, the witnesses, who had to speak to other circumstantial points of evidence, told a great deal too much. The prisoners, after a long and careful trial, were acquitted by the judge, but there can be no doubt that in this case a murder had been committed.

This case is especially interesting, as showing how important it is to note every fact at the first examination of the body. Any evidence which transpires afterwards, is of very little value compared with that first taken. Had the fact of the length of the rope and the ashes on the hands been brought at once to the medical man's knowledge, it is probable that his suspicions would have been aroused, and a more careful examination would have been made. Of course, as is usual in such cases, it was alleged that there were good reasons for hushing the matter up, and that the sub-magistrate, police, village authorities and apothecary were all in "the swim." This, however, was not proved.

Emission of semen and fæces.

It is by no means uncommon, that at the time of death, by hanging or strangulation, there is an emission of semen and fæces, and to this may be attributed the seminal stains in the above case. Many medical jurisprudents say that an erection of the penis usually takes place; but it is proved that this is by no means so frequent as to justify the laying down of any rule. It has been noticed, that there is frequently a discharge of saliva at the time of death, and this might furnish a very important piece of evidence. If the saliva has trickled down in front of the body and the clothes, it would seem most probable that, at the time of the discharge, and therefore of the death, the body was *hanging*. If, on the other hand, the saliva is found to have trickled out from the corners of the mouth, the body was probably lying down when death was caused, and has been hung up afterwards.

Death by strangulation without marks of injuries.

In the case quoted above, it will be seen that death can be caused by strangulation and suffocation, without leaving any marks of injuries. The marks, possibly caused by compression of the throat, if caused at all, would be afterwards covered by the cord. It is possible, in the above case, that the livid marks on the legs, chest and hands, may have been caused by some injury to the cuticle during the deceased's struggles. Being injured, they might show livid marks when decomposition set in, but at the same time there may have been no bruise or ecchymosis when the apothecary examined the body. The coincidence of these marks, with the position which the several murderers were afterwards described as having taken up, was significant.

Death can be caused by hanging without body being suspended.

Amongst many subordinate magistrates and the police of this country, there is a very mistaken idea that death cannot be caused by hanging, unless the body is actually suspended, and the feet are off the ground. There are, however, numerous instances in which persons have been found dead from hanging, with the feet on the ground, or with the body in a sitting or kneeling position. All that is required to produce death, is a sufficient weight on the cord to produce compression of the windpipe, or of the important blood vessels of the neck.

Tidy quotes a table from *Tardieu*, giving the results of 261 cases of incomplete hanging, in which death resulted :—

		Cases.
The feet resting on the ground	...	168
The body in a kneeling posture	...	42
Do. extended and lying down	...	29
Do. in a sitting position ...	...	19
Do. huddled up (accroupi)	...	3
		261

In bodies found partially suspended, attention should be paid to the cord, and its strength should be tested. Taylor cites a very important case, in which a woman was found dead in a sitting position, with a narrow tape round her neck, hung loosely and singly over a small brass hook. There was a bruise over the eye, the windpipe was lacerated, and there was a deep circular mark round the neck, which must have been caused either by suspension, or by considerable pressure. As far as the tape round the neck was concerned, it was impossible that the body could have been suspended by it, because the deceased weighed 120 lbs., while the tape round the neck was found to break with a weight of 49 lbs. It was proved that the deceased had been strangled by the hand and by a ligature, and that the tape was afterwards tied, so as to create a suspicion of suicide. In this case blood marks were also found on the tape where it was tied, whereas there was no blood on the hands of the deceased.

Warmth of body important evidence.

The warmth of the body may often furnish important evidence. In the July sessions at Cuddapah, 1884, a case was tried, in which this point would have been of great importance. A man had been seen quarrelling with his concubine early in the morning before sunrise, and was said to have been seen to strike her with his open hand. About half an hour afterwards he was met in the street and engaged to come and labour. He received a small advance, which he took home, and immediately afterwards followed his employer to his work. He remained at work for two or three hours, until about 10 o'clock. Some one then brought information that his concubine was hanging in his house. He at once went home, found her hanging, and, leaving her hanging, went off, he said, to fetch the village magistrate. The village magistrate came another way, and missed him, and when the man came back, the body had been taken down. There was no one to say, whether at the time the body was taken down it was warm or cold. There were marks of severe injury about the head and face; there was a fracture of the skull, and the spleen was described as having been smashed to pieces. These injuries could only have been caused after a severe and lengthened struggle, and there could be no doubt that the body had been suspended after death. The man was accused of having killed his concubine, but as the blow he was said to have given before sunrise, could not have caused the injuries found, all these wounds must have been caused in the half-hour preceding the time he was engaged to go to work. During this time a quarrel must have taken place, the woman must have died from the injuries, and then have been hung up after death. There were some other contradictions in the evidence, and the prisoner was acquitted, mainly on the ground that the time did not seem to have been sufficient for all these acts. Besides this, if he had really killed and hung up his concubine, it was improbable, when he received an advance, that he should have taken it home to where the body was hanging. It was proved that the deceased's father was very angry with her for her immoral life; in fact, he admitted before the sub-magistrate that he "hated her." From the circumstances, it seemed probable that the woman had been killed whilst the accused was at work. If, however, it could have been proved that when found the body was still warm, there could have been no doubt that she must have been killed whilst the accused was at work. The absolute importance of noting every trifling detail when a body is first found, cannot therefore be too strongly dwelt upon. The omission to record some little circumstance may result in the conviction of an innocent person, or in the escape of a guilty one.

Appearances in death by hanging.

The following are the appearances after death by hanging. The eyes are brilliant and staring; the eyelids open and injected, and the pupils dilated; the tongue, swollen and livid, is forced against the teeth, or more or less protruded from the mouth, and compressed or torn by the contracted jaws. The lips are swollen and the mouth distorted; and blood, or a bloody froth, hangs about the mouth and nostrils; the arms are stiff, the hands livid, and the fingers so forcibly closed on the palm, as to force the nails into the flesh; the convulsions are so violent, as even to cause the expulsion of the contents of the bowels, and to produce erection of the penis, with discharge of the urine, semen or prostatic fluid. The course of the cord is distinctly indicated by a well-marked bruise; and, on dissection, the muscles and ligaments of the windpipe are found stretched bruised, or torn, and the inner coats of the carotid arteries are sometimes divided; and more rarely there is a fracture, or dislocation of the cervical vertebræ, and injury of the medulla. The above description from Guy applies, it must be remembered, chiefly to bodies that have been judicially hanged, a process accompanied by considerable violence. In cases of suicide, these signs are by no means so strongly marked, and the face is far more composed. Suicides who have been saved from death, and others who have instituted experiments on themselves, describe the sensations in some cases as pleasurable. A sudden loss of sense and motion, sometimes a deep sleep ushered in by flashes of light, by ocular illusions, and by a roaring in the ears. In homicidal cases, however, there are always symptoms of great suffering.

Internal appearances.

The internal symptoms are those of asphyxia, already described, or of apoplexy, or of both. The stomach is often found highly congested as regards the mucous membrane, and presents the appearance of an irritant poison having been used. In this country, cases have occurred, in which persons who had been poisoned, have been hung up after death. In conducting an examination therefore, it must be remembered, that this appearance, as of an irritant poison, may be due to the hanging only, and an opinion should not therefore be formed upon it alone, but only if other traces of poison are also found.

Death by strangulation.

In deaths by strangulation, it will be generally found that the marks round the neck are more strongly developed, than is the case in suicides by hanging. More force is generally used by the murderer, and the injury to the parts is therefore greater. It is probable also that a struggle has taken place, and that marks of the struggle will be found on the body. This, however, is by no means always the case, especially in this country, where strangling is often effected, as in the case from Combaconum, whilst the victim is asleep. When there are two or three concerned in the murder, it is clear that it might be carried out without leaving any marks of violence. Strangulation is especially common in this country, where the victim has been concerned in an intrigue with a married woman, or where a wife is suspected of adultery. Dr. Chevers gives numerous instances of this crime, which, for many centuries, has been so prevalent in India. Thuggee is now happily extinct, or occurs but very rarely; but the traditions of this crime are still firmly imbedded in the minds of the people. Strangulation in India is effected in many ways :—

Different modes of.

(1) By compressing the throat with the hands, assisted also by the knee or foot. In these cases, owing to the violence which must be used to effect the purpose, there are sure to be very distinct marks, and it is by no means uncommon to find that the neck has been twisted round and the vertebræ dislocated.

(2) The throat is sometimes compressed by a stick or bamboo. The victim in such cases is generally caught

lying down; his hands and feet are held by different persons, and another places a bamboo over the throat, pressing both ends on the ground. Death by this means is generally slow, and may leave but very faint indications of the way in which it has been caused.

(3) Tying the throat with a cord, cloth or stalk. If a cord is used, it is almost certain that it will leave strongly developed marks, but this is by no means the case when a cloth is used. If a soft cloth, wrapped in broad folds, is thrown round the neck and gradually tightened, it will leave scarcely any marks, especially if at the same time death is aided by stuffing a cloth into the mouth. Flexible twigs and stalks are often used for strangling, and Chevers cites several cases of murders by this means.

Marks on the throat in death by epilepsy.

In cases of death by epilepsy, it is alleged that the person attacked frequently grasps his own throat, so that after death, marks of fingers might be found on the throat, and a suspicion of murder be thus raised. Dr. Chevers mentions the case of a man subject to epileptic fits, who died in a brothel, and upon whose neck were found marks of fingers. The prostitute he had been with was convicted of murder by the sessions judge, but was released by the High Court on the doubt that the death had been from epilepsy, and that deceased had clutched his own throat. An almost exactly similar case was tried before me at Cuddapah, towards the close of 1883. Deceased had been carrying on an intrigue with two females belonging to a wealthy ryot's family, all the male members of which lived together in one enclosure. One of the women, with whom he had an intrigue, together with her mother, slept together in a separate hut. One night, two of the male members, who were sleeping together, were aroused by the mother. They went with her, and immediately came back carrying deceased's body, which they placed in another hut and called the village authorities. On examination, marks of fingers were found on the neck. There were no other injuries, but a quantity of fæces had been expelled. The medical opinion was, that death had been caused by strangulation. The two men, who were seen carrying the body, were accused of the murder. The woman's story was, that she was awoke at night by a noise, and saw the deceased sitting on the ground near the wall of the hut. He was making a gurgling noise, and the mother then went to fetch the two sons, who, on coming, found the deceased to be dead. On the ground near where the deceased was said to have been sitting, some expelled fæces were found. There was no evidence to show that the deceased had been formerly liable to epileptic fits. For the prosecution it was urged, that the other woman, with whom deceased had had an intrigue, had told her brothers of this assignation, that they had surprised deceased with their sister, and had strangled him. Although the expulsion of fæces is by no means an uncommon symptom of death by hanging and strangulation, it is by no means confined to such cases, but is also found in many other cases of sudden death, as by gunshot wounds, shock, &c. If deceased had been surprised with the woman, it was difficult to understand how he could have been taken away and strangled on the ground where the fæces were found, without there being more marks of injury. Had the fæces been found on the bed, the prosecution story would have been more credible. There was a possibility of deceased having died in a fit, and the action of the accused, in at once sending for the village authorities, was against the presumption that they had been the murderers. Giving the prisoners the benefit of the doubt raised, they were acquitted, and though Government were moved to appeal against the acquittal, the Government pleader advised that no appeal should be made.

Mark round the neck may be due to hypostasis.

The appearance of strangulation, from a mark round the neck, may often be caused by *post mortem* appearances, or hypostasis. When a body is advanced in decomposition, the neck may become discoloured, so as to exactly simulate the mark caused by a ligature. Great care should therefore be used before expressing an opinion founded on such a mark, and it should always be remembered, that the only test for distinguishing between hypostasis and real ecchymosis is, by incision of the part. If this has not been done, no reliance whatever can be placed upon the evidence of the medical witness as to the cause of the mark.

Note.—As the different points of importance have all been discussed in cases quoted in the text, no Illustrative Cases are given to this chapter. The following outlines for the inspection and examination of a body in a case of hanging or strangulation is, however, reproduced *verbatim* from "Tidy's Legal Medicine."

Suggestive Outline for the Inspection and Examination of a body in a case of Hanging or Strangulation.

It is advisable to have a photograph taken of the body, as well as of the furniture and of other articles in the room, before anything is touched.

GENERAL ENQUIRIES.

Was the room locked on the inside, without other possible means of escape?

Were any fire-arms or other weapons, or marks of blood, or signs of struggling, noticed about the room?

Is the dress of the deceased torn, or the hair disarranged?

Does the dress, etc., indicate any interference with the body after death?

Note the position of the body, and the character of the dress worn (a tight cravat?).

What is the weight of the deceased? (This is important if a question should arise as to the power of the cord to sustain the ascertained weight.)

NOTES RESPECTING THE LIGATURES USED.

If the ligature is still round the neck, carefully note (or better still sketch) its exact position; the number, the character, and the method of tying the knot or knots (that is, whether the tying was the work of a right or left-handed person); and the exact position of the knots. Remove the cord by cutting so as to leave the knots intact.

If the ligature has been removed, ask for it.

Preserve and retain the ligature for evidence. It may be needful to compare it, with some material either in the possession of an accused person, or belonging to the deceased; or its possession may be traced to some one else.

Note the material of which the ligature is composed.

Do the ends of the ligature appear (if a rope) to have been freshly cut?

Compare the ligature with the impression on the neck.

Note whether there is any brown line on the ligature, such as might result from perspiration.

What is the strength (or weight-bearing power) of the ligature by which the body was suspended?*

Are there any marks of blood, or of hair or other matters, adherent to the ligature?

EXTERNAL APPEARANCES.

Are there any marks of violence on the deceased, other than those directly caused by the hanging or strangling?

By what instrument were these marks (if present) likely to have been inflicted?

Are they sufficient in themselves to account for death; or, if not sufficient, are they of such a character that they would induce great weakness from loss of blood?

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* The *strength* of a rope is that of its *weakest* part. This may be tested by suspending it (by a loop) from a ring or hook, and adding weights till it breaks.

The rules often given, such as the following, are useless for small cords:

"To estimate the strength of a cord of hemp, multiply the square of its number of inches in girth by 200, and the product will express in pounds the practical strain it may be safely loaded with. In the case of cables, multiply by 120 instead of 200." The ultimate strain is probably double this. Again, "in cables, the strength, when twisted, is to the strength when the fibres are parallel, as about 3 to 4." (Gregory and others.) The only safe way of answering questions as to the strength of cords, etc., is to experiment. As some guide to the *comparative* strength of materials, we give the following table of the breaking strain of certain fibres as experimented upon by two authorities:—

Fibre.	De Candolle.	Labillardière.
Flax (*Linum usitatissimum*)	11·7	1000
Hemp (*Cannabis sativa*)	16·3	1370
New Zealand Flax (*Phormium tenax*)	23·8	1996
Pita Flax, or American Aloe (*Agave Americana*)	7·0	596
Silk	34·0	2894

Were they probably accidental, suicidal, or homicidal (*i.e.*, likely to be caused in a struggle)?

Note:—

Face.—Pale? Swollen? Placid?

Mouth and *Nostrils.*—Foam?

Tongue.—Position? Colour? Whether injured or not?

Eyes.—Prominent?

Pupils.—Dilated?

Neck.—Note—

Character of Marks.—Presence of a groove? Whether it be complete or not? Colour of the borders of the groove, and of the parts beyond? Marks of fingers, etc.?

Direction of the Marks.—Whether oblique or not. Note the apparent position of the knots.

State of the integuments in the furrow.

Any excoriations or ecchymoses.

Hands.—Bloody? Clenched? Anything in the hands? (Carefully preserve any hair, etc., that may be found grasped or attached.)

Sexual Organs.—(In the male, note if there be spermatic fluid in the urethra.)

INTERNAL APPEARANCES.

Neck.—Dissect out the mark around the neck, cutting for this purpose through the skin an inch above and an inch below the mark. Note the state of the underlying tissues, the presence of coagula, etc.

The entirety or otherwise of the muscles of the neck?

Effusion of blood amongst the muscles and ligaments.

Injury to the larynx and trachea.

" " ligaments of neck.

" " bones (specially the os hyoides, atlas, and axis).

" " invertebral substance.

" " spinal cord (effusion of blood, etc.?).

Carotid Arteries.—Condition of inner and middle coats? Whether or not there are extravasations of blood on the walls or within the vessels?

Brain and Membranes.—Congested? Vascularity?

Larynx and Trachea.—Congested? Mucous froth?

Heart.—Right side full?

Lungs.—Congested? Emphysematous patches on the surface? Apoplectic extravasations in the substance?

Stomach.—Congested? Presence of food? Presence of poisons (such as of opium, etc., given to drug the deceased, or for other purposes)?

Are there any morbid appearances that would account for death, otherwise than by the hanging or strangulation?

Has there been any disposition on the part of the deceased to commit suicide, or is insanity hereditary in the family?

CHAPTER III.

ASPHYXIA—SUFFOCATION.

Definition.

SUFFOCATION means the exclusion of fresh air by other means than by external pressure of the throat (trachea). This definition would also include drowning, but the word suffocation is generally understood to imply exclusion of the air by covering the mouth and nostrils only. Tidy mentions, as the earliest instance of this kind of murder, the case as found in 2 Kings, viii. 15: "And it came to pass on the morrow, that he (Hazael) took a thick cloth and dipped it in water, and spread it over his (Benhadad's) face, so that he died, and Hazael reigned in his stead." As an historical case of smothering, the case of the two young princes, who were smothered in the Tower by orders of Richard III, may be mentioned.

Various kinds of.

The most frequent cases of smothering in Europe are those of young children, suffocated by overlying. These cases are, however, by no means so common in this country. Cases of suffocation in a crowd are common, and in the case of persons in a state of intoxication, suffocation occasionally happens by a portion of the food or vomit obstructing the throat. In the case of Mrs. Gardner, which has already been quoted, although the deceased's throat had been cut, death was actually caused by suffocation, owing to the blood flowing into the air tubes. Children are often suffocated by swallowing hard substances, such as the nipple of a sucking bottle. Grown-up people have been suffocated by swallowing their false teeth during sleep, and Negroes are said to commit suicide by doubling back their tongues and swallowing them (?). Dr. Chevers says that a percentage of persons in this country are killed by swallowing living fish. This, he says, is an accident of by no means unfrequent occurrence amongst fishermen, who go about groping in the water to catch fish. It is not necessary that the closure of the air passage should be complete; partial closure is amply sufficient to produce suffocation.

Cases of suicidal suffocation are very rare, though there are some recorded cases of determined suicides, who have stuffed a ball of cloth into their *fauces*, and so have caused death. Suffocation is generally the result of an accident, but it may also be the result of some internal disease, of the bursting of an internal abscess, or of the pressure of a tumour.

Post mortem appearances.

The *post mortem* appearances in death from suffocation are exactly those of asphyxia, and need not be further described. Tardieu lays great stress on the existence of *punctiform* sub-pleural ecchymoses (Tardieu's Spots) as a sign of suffocation. They are considered due to small effusions of blood, ruptured during efforts at expiration. They are usually to be found at the root, base, and lower margins of the lungs. These spots, however, are not an infallible test, because they may not be found in indubitable cases of suffocation, and they have been found in cases of hanging and drowning. They have also been found by Dr. Ogston after death from scarlatina, heart disease, apoplexy, pneumonia, pulmonary apoplexy, and pulmonary œdema.

Homicide by.

In this country it is probable that many cases of homicide by suffocation occur in the manner described in the Suriyana Kovil case, given in the last chapter, but as probably at the same time violence is used, death will result from other causes, such as strangulation combined with suffocation. The Resurrectionists, who killed persons in order to sell their bodies for medical examination, applied a plaster over the mouth and nostrils, and, in addition, applied pressure to the chest.

Dr. Chevers gives numerous instances of homicidal suffocation by filling the mouth with mud, sand, cloth, compressing the chest, and closing or covering the mouth and nostrils. In cases of this kind it commonly happens that the victim's testicles are squeezed. It is possible that this squeezing accelerates death by the shock caused to the system by the intense pain, whilst at the same time respiration is obstructed.

ILLUSTRATIVE CASES.

(Part II, Chapter III.)

◆

LX.—*Accidental suffocation.*

(*a*) A groom was accidentally suffocated by falling into a quantity of hay through a hole in the hay loft.

(*b*) A man was suffocated by the fall of some flour, which he was shifting from the upper to the lower part of a granary.—(*Taylor.*)

(*c*) Chevers gives a case in which fourteen coolies, men, women and children, were suffocated by the falling in of a loft in which linseed was stored.

(*d*) Dr. McLeod has given cases of persons suffocated by the falling in of a river bank, and also of drowning in sand and mud. Caspar mentions a similar case of suffocation in sand. The sand was found adhering to the mucous membrane as far down as the commencement of the bronchi.

LXI.—*Homicidal suffocation.*

The following instances are taken from Chevers :—

One Ramchoru, of Goruckpore, was found guilty of rape upon a girl of eight. The child, who appeared to understand the obligation of an oath, declared that the prisoner threw her down and filled her mouth with sand.

LXII.—A boy was convicted of having robbed a child of four, after having filled her mouth with sand, and nearly strangled her. The child was found in a field with her mouth full of earth, and with the marks of fingers on her neck.

LXIII.—One Bhageeruttee, of Goruckpore, was sentenced to death for the murder of a boy of nine, for his ornaments. He confessed that he had put a cloth in the child's mouth, and, seizing the throat, had choked him.

LXIV.—Dr. Littlewood mentions the case of a woman who was suffocated whilst drunk, by forcing a cork into the larynx. The sealed end was uppermost, and there were marks of a cork-screw in the cork, rebutting the defence that the cork had slipped in as the woman was drawing it from the bottle with her teeth. Ribs were also fractured.—(*Tidy.*)

LXV.—Case of Mary Campbell, killed by Bourke and his companions. Suffocation was caused by pressure on the chest, at the same time compressing the mouth and nostrils with one hand, the other being forcibly applied under the chin. At the *post mortem*, fifty-nine hours after death, the following appearances were observed : Eyes closed and bloodshot. Face composed, but somewhat red and swollen. Excepting the face, no other lividity. Blood issued from the nostrils. Tongue normal. Slight laceration on the upper lip, opposite the eye tooth flaccid joints. Os hyoides and thyroid cartilage more separated than normal, but no external injuries apparent. Some marks of violence on the limbs.

Windpipe.—Normal, except it contained a little tough (not frothy) mucous.

Lungs.—Normal.

Heart.—Right side full of black fluid blood.

Blood.—Black and fluid.

Abdominal Viscera.—Healthy, except incipient liver disease.

Brain.—Slightly turgid. Three extravasations on scalp.

Effusions of blood on the sheath of the spinal cord, and among the muscles of the neck, back and loins.

Injury to the posterior ligamentous connection between the 3rd and 4th cervical vertebræ. (This was probably done after death by doubling up the body.)—(*Tidy.*)

LXVI.—*Suicidal suffocation.*

Taylor cites a case of suicide by a woman who placed herself under the bed clothes, and made her child pile numerous articles of furniture on the bed. She was found dead some hours afterwards.

LXVII.—Ogston speaks of a servant girl who suffocated herself by shutting herself up in a trunk.

LXVIII. *Tidy*, amongst numerous other cases, gives one of Mr. Brunel, who, in 1843, swallowed a half-sovereign which became lodged in the right bronchus, and at first caused great dyspnœa. For two days afterwards he experienced little inconvenience, but afterwards bad symptoms set in. Twenty-two days afterwards he was strapped in a prone position on a platform, made moveable on a hinge in the centre, by which means the head was lowered to an angle of about eighty degrees with the horizon. When in this position, the back of the chest was struck with the hand, violent choking symptoms resulting. Two days afterwards, being placed again in this position, tracheotomy was performed, but the attempt to grasp the coin through the wound, failed.] [Sixteen days after this, the wound, having been kept open, he was again inverted and his back struck with the hand, when the coin, owing to an effort to cough, quitted the bronchus and fell out of the mouth.

LXIX.—A case is given in the *Indian Medical Gazette* (1874), in which a man swallowed a live fish whilst he was swimming. The fish was extracted, after some difficulty, as it had seized hold of the man's uvula.

LXX.—A man in the water having caught a perch, put it into his mouth, trying to hold the head with his teeth. It escaped, however, and jumped down the man's throat. Symptoms of suffocation set in, rendering tracheotomy necessary. Death followed.

CHAPTER IV.

SUFFOCATION FROM GASES—BURYING ALIVE—SUICIDES.

Suffocation from gases.

Cases of suffocation from inhalation of noxious gases, rarely come before the criminal courts of this country. When such cases do occur, they are almost invariably cases of accident, as in the excavation of old wells, cleaning out of old cesspools, inhalation of charcoal fumes, &c. In all these cases death occurs from asphyxia, and the *post mortem* symptoms will be the same as those already described. Chevers mentions several cases, in which women and children have been killed by sleeping in a closed room, in which charcoal was burning. In these cases death was caused by inhalation of carbonic acid. This same gas is engendered in old disused wells, especially if there has been an old accumulation of refuse at the bottom. It is generally supposed, that a safe test is the lowering of a lighted candle, and that if the candle burns, the air is not injurious. This test, however, is not a certain one. It is certainly true, that if the candle will not burn, the air would be fatal to life; but the converse is not true. By digging, especially amongst accumulated rubbish, at the bottom of a well or pit, a quantity of carbonic acid may become suddenly disengaged and prove fatal. Chevers mentions a case of some seamen, who were suffocated by going into the fore-peak of a ship to execute some repairs. Here the bad air had probably been generated by bilge water. The fumes from a brick or lime-kiln are also highly dangerous, and Taylor speaks of two boys, who were killed by sleeping near a burning brick-kiln.

Deaths from lightning.

Deaths from lightning would seem to call for no remark, as they will rarely form the subject of a criminal enquiry. It may, however, be observed, that persons struck by lightning are often found with wounds exactly similar to those caused by a cutting instrument. The body also generally bears considerable ecchymoses. There will, however, frequently be marks of burning about the body or clothing, and damage to, or even partial fusion of, the metallic articles about the person. It often occurs that there are more marks of burning at the place of exit than at the place of entry, of the electric current. Sometimes the bodies of persons killed by lightning present no external mark of injury.

Burying alive.

This practice has long been prevalent in India, and indeed in many other countries.* Among the mediæval monastic bodies in Europe, it is said that immuring alive was a not unfrequent punishment for unchastity, and the practice forms the subject of one of the Ingoldsby legends—Nell the Cook. It is said of the Begum Sumroo, the Native wife of Dyce Sambre, that she caused a slave girl, of whom she was jealous, to be buried alive, and then had her bed placed over the spot. Sir Thomas Roe, who visited the court of the Great Mogul in 1614, says that he was an eye-witness to an execution of a woman on account of an intrigue. She was buried alive up to the arm-pits. It is told of another native prince, that he was in the habit of having prisoners, taken in war, buried up to the neck, and of then playing bowls, by rolling cannon-balls at their heads.

It was at one time a very common practice to bury lepers alive, and when these unfortunate wretches were in the last stage of disease, they would implore their sons or relatives to dispose of them in this manner; indeed, they would threaten to curse and haunt them if they did not. It is possible that cases of this kind still occur, especially in wild uncivilized parts of the country. In Rajputana, cases of burying alive were reported in 1868, and it is possible that this custom may still continue; for, in the Administration Report of 1882-83, it is stated that the equally barbarous custom of witch-swinging is still of frequent occurrence. When a woman is suspected of being a witch, she is either made to plunge her arm into boiling oil, or else her head is kept under water, whilst an arrow is shot from a bow and brought back to the place whence it was shot. If she passes through the ordeal, she is set free; if not, she is swung head downwards, until she either confesses or dies. If she confesses, she is killed. This same practice, of holding a person under water whilst an arrow is shot and brought back, is prevalent in the Hyderabad territory and amongst some of the hill tribes. Formerly it was by no means uncommon for a widow to be buried alive with her deceased husband. Old travellers speak of this custom, and many cases of it, especially from among the weavers of Tipperah, are reported in the Parliamentary Blue Book, as having happened in 1824 and 1825. Chevers mentions a singular case of two young Hindus, who inveigled a gumastah into their house at night and shoved him into a hole, and then putting a board over him, which exactly fitted the grave, stood on it until he was suffocated. The body was found in a very decomposed state, but with no external marks of injury. Where persons are buried alive, death takes place from asphyxia, and the *post mortem* signs will be exactly the same as in cases of suffocation.

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* In ancient Rome Vestal virgins, who broke their vows, were thus punished.

Suicides, statistics.

This is a subject deserving of very careful attention. For statistics and remarks on suicides and accidental deaths, see Part II, Chapter I.

Causes of suicide.

The causes of suicide in this country may be ascribed to—

(1) Physical suffering.

(1) *Physical suffering.*—These are most common, and the usual form of the village and police report is: "So and so (a woman generally) unable to bear the pains in her belly, fell into a well and accidentally died." With reference to this subject, Dr. Woodford, quoted by Chevers, says that he has "long considered that the pain, low spirits, and weak health produced by the presence of *lumbrici* in the intestines in the rice-eating poor of Bengal, combine as a cause of suicide."

(2) Grief, shame, and anger.

(2) *Grief, shame, and anger.*—These deaths call for no

further remark, except that it frequently happens that a woman, after a quarrel with her husband, will either go and drown herself, or attempt to do so. It often occurs that these attempts are nothing more than threats to make the husband give way. In the Mahabharata, we read of the "chamber of wrath," to which a wife would retire, and where she would lock herself up, and remain divested of her jewels, refusing food until she got what she wanted. More than one case has come before me as a magistrate, in which, after a domestic quarrel, for a cloth or a jewel, the wife has run to the nearest well and plunged into the water, exclaiming aloud that she would destroy herself. In these cases, however, I have found that she went down the steps; took very good care not to go out of her depth, and made no strong opposition against being taken out again. At the same time it is by no means uncommon for a woman to really commit suicide after a severe quarrel with her husband, in which perhaps she has also been beaten.

(3) Revenge.

(3) *Revenge.*—Suicide from revenge was of more common occurrence in former days than it is now. At one time the feeling was common, that by committing suicide, one's enemy incurred the guilt and responsibility of the death. There are many historical instances of this, but perhaps the most remarkable is the immunity which the Rajputs enjoyed from the attacks of robbers when they were employed as escorts. If threatened with an attack, it was a point of honour with them to kill themselves, and their caste being a particularly high one, the guilt of their deaths rested upon the aggressors. The custom of sitting *dhurna*, punishable under the Penal Code, in which a person starved himself to death unless his demand was granted, is another example of the same feeling. Father Martin, quoted by Chevers, writing in 1709, says: "There is an old practice, which doubtless will surprise you, but it is certain those Indians observe the law of retaliation very strictly. If there happens to be a quarrel, and one of the parties pulls his own eye out, or is guilty of suicide, the other party must inflict the like punishment upon himself, or upon one of his

relations. The women carry this barbarous custom still further: when any affront is put upon them, or reproachful word used, they will go and break their heads against the door of the offending person, who is obliged to inflict precisely the same punishment upon herself. If one woman poison herself, by drinking the juice of a venomous herb or plant, the other female, who was the cause of it, is obliged to do the same; and, should she fail in it, the rest would set fire to her house, run away with her cattle, and be perpetually tormenting her till such time as she had made such satisfaction."

Of the same nature was the old Hindu practice of the *Koor*. This custom was formerly made use of to intimidate the Government officers from enforcing a demand. A circular pile of wood was prepared, and on it was placed a cow, or sometimes an old woman, and the whole were burnt together. These old customs, which were the only weapons of the weak against the strong, and which show, more than anything else, the abject subjection of the masses to those in power, are now for the most part obsolete, but the tradition of them remains; the feeling which prompted them is probably still to be found, and they are therefore liable to crop up again from time to time.

(4) Suicide from religious feeling.

(4) *Suicide from religious feeling.*—According to the Ain Akbari, quoted by Chevers, there are five kinds of suicide held to be meritorious in the Hindu, *viz.*, "starving; covering himself with cow-dung and setting it on fire; consuming himself therein; burying himself in snow; immersing himself in the water at the extremity of Bengal, where the Ganges discharges itself into the sea through a thousand channels, enumerating his sins and praying till the alligators come and devour him; or cutting his throat at Allahabad at the confluence of the Ganges and Jumna." To these might be added the custom which formerly prevailed at the Mahadeo Hills, where men threw themselves from a perpendicular height of four or five hundred feet, and were dashed to pieces below, to fulfil the vows of their mothers. The practice of immolation under the wheels of a car was

not confined to Juggurnath only, but used frequently to occur at the festivals of other pagodas. There is reason to believe that occasionally such cases of suicide occur at the present time. At all events, it is by no means an unfrequent occurrence, that a man or a woman is crushed to death whilst the car is being dragged round the town. These cases are of course reported as accidents, but it is a coincidence that the sufferers are generally old and decrepid. Chevers says:—"On the 7th July 1864, the editor of the *Friend of India* mentions that a few days previously he had seen, near Serampore, two persons crushed to death, and another frightfully lacerated, having thrown themselves under the wheels of a car during the Ruth Jatra festival. It was afterwards stated that this occurrence was accidental. The fact and its explanation must stand on record together."

The custom of Suttee is by no means confined to women. The earliest instance of male Suttee is to be found in the Ramayana. King Dasarath, when dying, after Rama had gone into banishment, tells his favourite wife of an adventure that had happened to him when a boy. He said, that whilst out hunting, he had, by accident, shot the son of a blind old ascetic, whilst the son was drawing water for the father's use. After the accident had been discovered, the ascetic burnt himself together with the body of his son, and at the same time foretold, that when Dasarath should come to die, he should feel the same sorrow at being separated from his son. At various times numerous other cases of self-immolation by males have been recorded. They are of rare occurrence, and are confined generally to visionaries. It not unfrequently happens that these persons, previous to committing suicide, kill their own families. Of female Suttee, it may be remarked, that even at the present day, cases are occasionally reported. In the Administration Report of Rajputana for 1882-83, the agent reports that one case of female Suttee occurred during the year.

PART III.

CHAPTER I.

MEDICAL JURISPRUDENCE—RAPE.

Rape.

CHARGES of this offence are very common, and, as in Europe, the charge is frequently falsely made. Such charges are rarely established by eye-witnesses, and the conviction or acquittal of the accused will therefore, in a great measure, depend upon the statement of the woman, her examination, and also upon the examination of the accused.

It seems to be admitted, that for an ordinary sized man to commit a rape upon a full grown woman, without leaving traces of other injury on her person, is next to impossible. Of course, it is possible that a rape may be committed after the woman has been stupefied or intoxicated. Caspar, amongst many other cases, gives one of a false charge made by a married woman of forty-seven years of age, which is given *in extenso* (Illustrative Case, No. LXXI). Mere proof on examination that the woman has lately been deflowered, is of course not sufficient to prove that the accused committed a rape upon her, or that she has indeed been deflowered by sexual connection. In this country, where it rarely happens that a woman, who has arrived at puberty, remains unmarried, the question of defloration will probably not arise if the charge is made by a grown-up woman. If the woman is married, and has been accustomed to sexual intercourse, it is not to be expected that mere penetration, unless accompanied with considerable violence, will leave any traces, especially two or three days after the act. On the other hand, it is improbable that a grown-up woman could be raped without there being some traces of injury. Rape, however, can occur when the woman has been induced to give her consent by intimidation, or under a mistake. The majority of charges of rape are made by, or on behalf of, young girls, and very considerable caution must be exercised in the enquiry into such cases. In a great number of cases it will be possible to decide, from the child's manner, whether she has been tutored or not, and it must be remembered that marks of defloration, such as the rupture of the hymen, and marks of blood, are not sufficient to establish a rape. One of the first points which should be enquired into, is the caste and position of the child's parents. Where they are of respectable position and caste, it is most improbable that they would concoct a false charge of this kind; but if the mother is an abandoned character, such a concoction is by no means improbable. Chevers records several cases, in which prostitutes have deflowered their own daughters by mechanical means, in order to make subsequent connection with a man easy and painless. It is true that these means are generally gradual, but in the case of a dissolute woman, who wanted to wreak a revenge upon a man, it would be by no means impossible for her to rupture the hymen of her child with such violence as would leave traces of injury, and then to tutor the child to bring a false complaint. Blood stains are important, only if they have been subjected to medical examination, in which case, if spermatozoa are found, they must have taken their origin by sexual connection. Caspar's experiments, however, go to show that it is by no means an invariable rule that spermatozoa are found in male semen, especially when the man is advanced in age. When, however, spermatozoa are found, it is an undoubted proof that there has been sexual connection with a man, and if the girl is below the prescribed age, this would be sufficient to constitute the fact of rape. Charges of rape are frequently established by proving that the man is suffering under a venereal complaint, and has infected the girl or woman. But great caution should be exercised even in cases where it is proved that the woman is suffering from an apparently venereal discharge. Caspar points out that, especially amongst young children, there is often a *muco-purulent secretion* from the mucous membrane of the vagina, of a greenish-yellow colour, which, in colour and consistence, is not to be distinguished from the usual discharge of the primary stages of gonorrhœa. This appearance, he says, is extremely important, since it is almost constantly found, specially and particularly in children, from the twelfth to the fourteenth year, when the genitals have met with any violent usage. This discharge may, however, be only from the vagina, and not from the urethra, and may simply be the result of injury, and not of a venereal disease. Again, there is a discharge due to catarrh, scrofula, vaginal blennorhœa caused by worms, or by uncleanliness, which might be mistaken for gonorrhœa. Regarding this discharge, Taylor remarks: "It is frequently met with in girls up to six and seven years of age; and children thus affected have been tutored to lay imputations against innocent persons, for the purpose of extorting money. This state may commonly be distinguished from the effects of violence, either by the hymen being entire, or by the non-dilatation or laceration of the vagina or perinæum, by the red and inflammatory condition of the mucous membrane, and the abundance of the purulent discharge, which is commonly much greater than that which takes place as a mere result of violence. Capuron mentions two cases, in which charges of rape on children were falsely made against innocent persons, on account of the existence of purulent discharge, the nature of which had been mistaken." It is therefore most desirable that a medical opinion should be obtained regarding the nature of such a discharge, and, when examined, the witness should be asked what means he had adopted to convince himself that the discharge was a gonorrhœal one. On the other hand, it must also be remembered, that discharges from the male organ are not always venereal, but may sometimes be due to catarrh, &c. A careful examination of the man should also be made, and the mere fact of a seminal stain on a man's cloth should not be taken as a proof that he was suffering from a venereal complaint. Of course, where it is indubitably proved that the man is suffering from a venereal complaint, and that the woman is suffering from a similar disease, this would be strong corroborative proof of the woman's statement—if otherwise credible—that connection had taken place between them; and in the case of young girls below the prescribed age, such evidence has been sufficient to obtain the conviction of the accused of rape. In all such cases, however, care must be taken to prove (1) that the disease is a venereal one; and (2) that the diseases under which the accused and the female are suffering, are of the same nature.

As regards the injuries caused by rape on a virgin, it should be remembered that, especially with young girls, one or several *lacerations* of the hymen are more frequently found, than a complete destruction of it. This is a point upon which Caspar, whose experience in such matters was very great, insists most strongly. "In little children," he says, "the hymen is almost never found destroyed," even when the male organ has been inserted. It does not therefore follow that a charge of rape is false, because the hymen in a young girl is found undestroyed.

As regards the age when native girls attain puberty in this country, Dr. Chevers has collected some valuable information. He speaks of one case, told to him by Dr. Chuckerbutty, in which a girl became a mother at *ten* years of age. In this case the doctor had known the girl from infancy, and could therefore speak with certainty regarding her age. Dr. Chevers says that menstruation at ten years is very uncommon, and does not probably occur in more than one or two cases out of a hundred females. He also remarks, that females in indigent circumstances menstruate later than those who are well nourished. Amongst the former, he never observed a case of menstruation earlier than twelve years, but girls in good circumstances begin to menstruate at eleven years of age.

As regards the menstruation of European girls in India, Dr. Fayrer has given the ages at which twenty-seven girls in the Calcutta European Orphan Asylum, began to menstruate. They were all of pure European lineage. The earliest age was twelve years and two months in a girl born in India. Of the whole number,

Four	commenced	between	12—13	years of age.
Eight	„	„	13—14	
Nine	„	„	14—15	
Five	„	„	15—16	
One	„	„	16—17	

It is almost superfluous to remark, that although native girls are married very young in this country, they continue to reside in their parents' house until their first menstruation, after which they are sent to live with their husbands.

As regards the male, there is a difference between the English and Indian Law. In England there is an irresistible presumption of law, that a boy under fourteen cannot commit a rape. In this country no such limit of age is fixed, and the physical capacity is a matter which can be proved. As a matter of fact, a boy of ten years of age has been convicted of rape on a girl three years old, but in this case he was punished for a misdemeanour only (Mayne).

In a charge of rape, evidence of the woman's previous bad conduct cannot be brought, unless she herself has been questioned on the point. The remarks of Mr. Mayne, as regards this, seem to be somewhat contradictory. In the tenth edition, page 299, he says: " Although the prosecutrix may be asked, on cross-examination, whether she has not had illicit connection with other men, *her answer is final, and evidence to contradict her is inadmissible*;* but on the following page he says: "The badness of her character is, however, a very important element in deciding whether she was violated, *or* whether she voluntarily consented to the act. Hence the prisoner *may always adduce evidence of her notorious want of chastity*, or of her having had illicit intercourse with himself, *or with other men*;* but it would seem, that evidence of such particular facts cannot be given, unless the prosecutrix has been cross-examined upon this point." I should not notice this contradiction, except that Mr. Mayne is so great an authority, that either passage might be adduced as an argument.* There seems to be a difference in cases of rape to cases, as regards which, the ordinary rules of character are in force. As a general rule, evidence of a man's previous bad character cannot be produced against him, unless he has first cited evidence of good character. But it is manifest, that a woman in the witness-box, swearing to a charge of rape, is in a very different position to a prisoner, whose statement is not recorded on oath. She is a witness, and the general rule, that evidence may be brought to discredit a witness's statement, must apply. It is clear, that, supposing there has been an actual connection between the woman and the accused, and she says that it is a case of rape, she at once puts the prisoner at a disadvantage if she swears she has never had previous connection with him, and he is not allowed to produce evidence to rebut this statement. The denial by the woman of any previous illicit intercourse, *is, in fact, an assertion of good character*, and this having been asserted, the prisoner can disprove it.

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* The italics are my own.

The charge of rape is one so easy of assertion, and so difficult to disprove, that the utmost caution must be observed in crediting the woman's statement. She should be carefully cross-examined, and her statement should be tested in every possible manner, and especially so when she is of bad character. Of course, a woman of previous bad conduct may be the subject of a rape. Caspar gives a case of a servant girl, who was clearly proved to have been previously deflowered, but who was attacked by some robbers, who entered the house and raped her under the most brutal circumstances; but where a woman has been surprised in the act, even though she has previously borne a good character, the accusation of violence, to save her own reputation, is so easy to make, and one, which, if she has presence of mind, she can, by a scream, so easily simulate, that evidence of her previous intimacy with the accused should always be allowed, if she denies it on cross-examination. This evidence need not necessarily be conclusive against her statement, but should be considered by the judge in weighing the probabilities of the case.

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* See Note at end of chapter.

So much latitude is allowed to the prosecutrix, in such charges in this country, that the prisoner would be at a complete disadvantage if he were not allowed this opportunity of replying to her evidence. In charges of rape, the ordinary rules of hearsay evidence are entirely set aside, and not only is the woman's statement to a third party admissible, but also the details of it, including the name of the man, &c. In fact, where there is no one who can speak to such a complaint having been made immediately after the alleged offence had been committed, a presumption at once arises against the woman. The fact of this complaint, and the hearsay evidence as regards it, is one of the best points in corroboration of the woman's statement. If therefore the prisoner were debarred from producing evidence of such previous intimacy as would be favourable to him, he would, in a great measure, be prevented from establishing his defence. In all such charges, an important point for consideration must be the previous relations of the parties concerned.

A man cannot be convicted of a rape on his own wife if she is over ten years of age, although he may be convicted of an abetment of the offence by others, as in the case of Lord Audley (Archbold, 235). A man may, however, be convicted of an unnatural offence upon his wife, an example of which occurred in my experience (Illustrative Case, No. LXXIV).

It may be remarked, that in this country, generally speaking, very little reliance can be placed upon witness's statement of age. In almost every case that comes before a magistrate or a judge, there is a witness who cannot tell his age, and the court has to guess it. I have heard an old woman, who could not have been under sixty years of age, declare that she was only ten.' I do not, however, remember that the converse has ever been sworn to. Whatever error is made, is generally in favour of youth.

Penetration constitutes the crime of rape in this country, but it is not stated *what* has to be penetrated. In the case of very young children, the most experienced authorities seem to agree, that, although there may be a laceration of the hymen, it is extremely rare that there is perfect penetration, or destruction, of it. In this country cases have occurred, in which the medical evidence was to the effect, that from the tender age of the child, penetration could not have been effected. Injury is admitted, but rupture, or penetration, of the hymen, is found not to have taken place. I take it that the word "penetration" need not necessarily be held to refer to the hymen; but that directly any portion of the male organ has penetrated the *labia,* the crime is complete. It is complete to all intents and purposes, and it seems absurd that a medical theory, regarding the impossibility of the hymen being penetrated in girls of tender age, should stand in the way of a conviction. The word "penetration" will refer equally to the labia as to the hymen or vagina. In England, the terms are: "The introduction of the male organ within the *vulva* constitutes 'penetration.'" I am not aware of any ruling in this country as to what constitutes penetration.

To the police and subordinate magistracy I would say: Immediately a complaint of this kind is made, send the woman for medical examination. Every day of delay makes the proof of a true charge more difficult, and of a false charge more easy. When a person is accused of an offence of this kind, ask him what he has to say in his defence. If he admits the connection, but denies the rape, endeavour at once to collect evidence of the status and previous relations of the parties. If this is not done *at once,* there is every opportunity given for the concoction of false evidence.

Note.—Reg. v. *Holmes,* 1.—L. R. C. C. R., page 334, would seem to draw a distinction between the evidence of a third party as to previous connection with a woman bringing a charge of rape, and general evidence of bad character, or evidence that the accused had previous connection with her. It would therefore seem to be safe to say, that if the prosecutrix denies having had connection with a third person, no evidence can be produced to contradict her of the particular act, but if she denies previous intercourse with the prisoner, he can produce evidence, because it would be material to his defence, or if she denies being a common prostitute, evidence of the fact is admissible as being relevant to her general character.

ILLUSTRATIVE CASES.

(Part III, Chapter I.)

◆

LXXI.—*Alleged rape of a woman, aged forty-seven.*

The following important example of a false charge is given *in extenso* from Caspar's For. Med., Vol. 3, page 314:—

"This was a most important case of accusation of breach of official duty against an official of the —— court, and it was required to determine the truth of an alleged rape, attended by gonorrhœal infection, after five physicians, two of whom were forensic, had been already employed in the matter. According to the statement on oath of the prosecutrix, Mrs. R., E., who, we may mention by the way, had the most favourable testimonials of character as an official, a husband, and a father, when he had to carry out an execution against Mrs. R. ten months ago, on the 3rd of July, gave her to understand that he would refrain from action, provided she yielded herself to his wishes. Whilst thus conversing, sitting on a ditch beside her, he suddenly fell upon her, flung himself on the top of her, uncovered his penis, and so completely consummated carnal intercourse that the prosecutrix 'felt a strong ejaculation of semen from him.'" "The whole of this description of the procedure," I said in my report, "is entirely devoid of internal credibility. Mrs. R. is forty-seven years of age, healthy, and apparently quite strong, married, and the mother of several children, and consequently, not to be regarded as wholly unknowing in these matters, and though she has not even once sought to explain away the improbability of her statement, by the allegations of temporary illness or unconsciousness, yet it is all the less probable that the proceeding described actually took place; that the accused, E., is a man already forty-two years of age, and not of colossal size or strength, but only of a middling size, and happily married for many years, so that the sexual ardour of early youth cannot be any longer supposed to exist in him. Nevertheless, the prosecutrix declares that by this intercourse she has been inflicted with gonorrhœa. For this she has applied to Drs. G., N., and I., one after the other, whose certificates and recipes are included in the documentary evidence. Of the latter I only remark, that they have all been actually prepared, as we learn from the apothecaries' price stamp affixed to each, and that remedies are prescribed in them such as are usually prescribed for urethral mucous discharge (gonorrhœa). Whether Mrs. R. has used all these medicaments, of course I cannot give any opinion. In regard to the statements of the physicians, that of Dr. G. is of no value, as he never examined Mrs. R., because at the consultation she made 'not the best impression' on him, and he only prescribed in accordance with her own statement of her complaint. There is no certificate from Dr. I. Finally, Dr. N., on examining the genitals of Mrs. R. on the 3rd of August, that is only four weeks after the alleged infection, when the last traces of gonorrhœa have seldom if ever quite disappeared, found 'no symptom of gonorrhœa, but only a clear mucous discharge; which, however, only came from the vagina and not from the urethra,' and the physician last named convinced himself of this by making pressure along the course of the urethra. This experiment is convincing enough that on the 3rd of August Mrs. R. had no gonorrhœa (mucous discharge from the urethra), and I may consequently affirm that the supposition of Dr. G., that she had no gonorrhœa at all, was correct. The slight mucous discharge from the vagina does not require to be considered here, since an affection of this character is a very common occurrence in women, and no conclusion can be drawn from it as to the pre-occurrence of intercourse, especially of impure intercourse."

"Having thus shown, that it cannot be asserted that Mrs. R. was violated and infected with gonorrhœa by the accused on the 3rd of July, my duty in regard to this case might seem to be discharged. But the certificates of district physician, Dr. L., dated the 18th of September and the 5th of November, and of the forensic surgeon, K., dated the 23rd of September, are apparently opposed to the conclusions just drawn. Dr. L. was officially required to examine Mrs. R. on the 18th of September, that is ten weeks after the alleged rape, and he found 'traces of what is alleged to have formerly been a violent leucorrhœa,' which he calls 'trifling.' Nevertheless, the forensic physician named does not hesitate to assume 'with certainty, from the mode of commencement and the course of the gradually lessening disease, that it must have arisen from impure connection with a man affected with gonorrhœa.' Dr. L., therefore, in the first place, from the results of an observation, which is anything but correct, like that of Dr. G., because, as already remarked, 'leucorrhœa' (mucous discharge from the vagina) and true urethral gonorrhœa are two perfectly different diseases; and in the second place, from mere subjective assertions of the prosecutrix, which it is evident can possess no scientific value whatever, deduces his conclusion 'with certainty;' a conclusion, in the certainty of which I am very far from sharing; but Dr. L. and surgeon K. also declare, that they found in the accused the traces of an actual gonorrhœa. L. examined him first on the 5th of November, that is, just four months after the alleged intercourse, and on his shirt 'a few small yellowish stains were visible, which were the results of a discharge from the urethra, which seemed to be the sequela of a gonorrhœa.' Surgeon K. certified, eleven weeks after the alleged crime, on the 23rd of September, that he found the aperture of the urethra of E. not inflamed, and also no purulent discharge from it, but that on his shirt there were about twelve 'yellowish-green purulent stains, some the size of a lentil, others of a pea, and a few of them quite recent,' and from this in curious connection with the 'suspicious behaviour' of the party examined, he draws the conclusion, that E. laboured under a virulent gonorrhœa on the 3rd of July, and was capable of communicating the infection.—But small yellowish-green stains, and few in number, on the linen of both sexes, may readily deceive. I have already spoken of a leucorrhœal discharge from the vagina in women. But the urethra is also clothed with a mucous membrane, which, like every other mucous membrane,—that of the nose for example—sometimes secretes, even in men, an unusual quantity of mucous which escapes upon the linen. This may be caused by catarrh of the bladder or urethra, hæmorrhoids, gout, the irritation of worms, &c., and physicians very frequently find considerable discharges of this nature where any suspicion of any infection by impure intercourse is wholly out of the question. To conclude, from the appearance of a few stains, such as those described, that there has been impure intercourse, is all the less justifiable where no inflammation is to be found in or about the urethra, which surgeon K. expressly denies. Moreover, at the precognition, on the 10th of February, he deposed what he has to-day again declared to me, that he suffers from occasional incontinence of urine, and especially when much disturbed mentally he cannot well retain his urine, and there is then 'a slight escape from the urethra.' I know not whether this was his condition at the time of the examination; it is, however, certain that the stains referred to must have had a different source from that supposed by both of these experts. Finally, I have still to state, that the day-before-yesterday I examined Mrs. R., and to-day both of the E.'s to ascertain the condition of their genitals, and I have found them all three sexually perfectly healthy, and not affected with the slightest trace of gonorrhœa, and that the wife of the accused asserted to me, as she had formerly done when precognosced, that notwithstanding continuous intercourse with her husband, she had always been perfectly healthy. In accordance with what has just been stated, I give it as my opinion in regard to the queries put to me, 1. That it is not to be assumed that E. could have committed a rape upon Mrs. R. on the third of July in the manner stated: 2. That there is no proof that Mrs. R. suffered from gonorrhœa subsequent to the 3rd of July, and that, according to the documentary evidence, the contrary is more probable: 3. That E., and 4. also his wife, are not at present affected with the said disease, and no traces of its former existence are to be found: 5. That the conclusions drawn by the physicians, L. and K., from the stains upon the shirt are not correct, and that these stains may have arisen from a different cause."

LXXII.—*Infantile leucorrhœa adduced in support of a false charge of rape.*

The following case is quoted from Wilde by Taylor:—A charge was raised against a respectable man, that he had had intercourse with, and produced disease in, two children. The day and hour was circumstantially given, extorted, as it appears, from the children, by the parent, and the man was put upon his trial. The appearances were such as are usual in these cases,—a purulent discharge from the vagina with some excoriation, but no bruise, laceration, or mark of violence on the pudendum. There had not been any penetration of the vagina. The charge against the prisoner, although unsupported by any affirmative circumstances, received some strength from the admission made by one medical witness for the prosecution, namely, that the appearances *might* have been the result of violence, and that the discharge *might* have been produced by friction with the member of a healthy man. It was proved that the prisoner was not affected either with gonorrhœa or syphilis. Geohegan, Churchill, and other medical witnesses of repute, gave testimony to the effect that the child was labouring under an ordinary form of disease, and that there was no medical indication that she had been subjected to any kind of violence. This evidence was considered insufficient, since it was still held by the court that the marks *might* have been caused by violence. The man would probably have been convicted on the child's statement, but was able to prove a complete *alibi.*

LXXIII.—*Doubtful conviction on similar evidence.*

The following case, also quoted by Taylor, was tried at

St. Louis'. A man was charged with attempt to violate a child, *ætat* nine. The evidence against the prisoner was chiefly based on an extorted admission from the prosecutrix, and on the discovery on her clothes of certain stains supposed to have been produced by seminal fluid. The mother examined the genitals, and found them inflamed and discharging matter, although several weeks had elapsed since the alleged attempt. A medical practitioner was called to the girl: he found the nymphæ and orifice in a state of inflammation, which might have arisen from some morbid cause; but he was unable to give any positive opinion regarding the nature of the discharge. About eight days after this, the girl was examined by Stephens, when the parts were still much inflamed and discharging muco-purulent matter. The hymen was uninjured. The defence of the prisoner was, that he was not guilty, and that he was not labouring under gonorrhœa at the time of the alleged complaint. He was convicted. Taylor says: "It is not improbable that this was a case of vaginal inflammation mistaken for gonorrhœa; for, as it has been already stated, there are no certain means of distinguishing the two kinds of discharges. The jury, however, decided by moral circumstances, and not by medical evidence."

LXXIV.—*Unnatural offence by a husband on his wife.*

In 1870, a Mussulman was charged before me, as head assistant magistrate of North Arcot, with having unnaturally abused his wife. He had kept her confined in his house for some time after the marriage, and continually repeated the offence, under circumstances of great brutality. To prevent her resistance, he tied her down to a cot, &c. The girl (she could not have been more than twelve or thirteen) managed to send a letter to her brother, who was a sepoy. He came and took her away in her husband's absence. The evidence of the medical witness, Dr. Silas Scudder, was decisive that the offence had been committed. The man was committed to the sessions, and sentenced to a long term of imprisonment.

LXXV.—Amongst the numerous cases quoted by Chevers, the following may be reproduced:—

One Kewal was tried at Delhi, on the accusation of a girl of ten, for an attempt to commit a rape. Two midwives, who examined the person of the child, deposed that an attempt to commit a rape on the child had evidently been made, but that the act had not been consummated. In this case the joint-magistrate did not examine the civil surgeon, and, on being called upon by the sessions judge for an explanation, said that he considered the opinion of experienced women more reliable than that of the native doctor, and also preferable on account of feelings of modesty. The explanation was accepted, but Chevers very rightly objects to the magistrate's "most questionable opinion that, in cases of rape, examination by midwives is always preferable to that by persons of the other sex."

LXXVI.—A lad of Benares, who stated himself to be eighteen, but who appeared to be fourteen or fifteen years old, confessed at the thannah and magistrate's court, that he had carnal knowledge of a child of seven, had caused her death in so doing, and had stolen her ornaments. The body was found concealed in a room, much decomposed, with a stone on the chest, and a cloth wrapped round the neck. Dr. Leckie, on removing the cloth, found that the whole of the soft parts of the neck had been destroyed, from which he inferred that it had been compressed, and that strangulation was the probable cause of death.—(*Niz. Ad. Reports, N. W. P., June* 1853.)

LXXVII.—*Mechanical means used to destroy the hymen.*

Dr. S. C. Mackenzie informed Dr. Chevers, that he was told by his servant, that the bawds, who train up girls to prostitution, insert a piece of sola, (the soft spongy stem of *Æschynomene paludosa*), which supplies the place of corks in native pharmacy, as large as the vagina will contain, and then make the unfortunate sit in water. A dilating action, similar to that of a sponge-tent, is the consequence. They gradually increase the size of the plug. Another case is also quoted, in which a stone was inserted for the same purpose

LXXVIII.—Numerous cases have occurred, in which the man has attempted to rape a girl, and, on meeting with any opposition, has killed her. Numerous cases have also occurred, in which the pudendum has been penetrated by a stick, causing severe laceration, hæmorrhage and death. It is, as Chevers remarks, doubtful, whether an act of this kind would constitute penetration according to the definition of rape; but there can be no doubt that it would come under the head of causing grievous hurt with a dangerous weapon ; or, if death resulted, murder.

LXXIX.—A procuress brought a girl into the Officers' Barracks, Fort William, Calcutta; but the person to whom she was presented, objected to the girl on account of her youth. The bawd having been disappointed of her fee, in revenge, injured the child, so as to cause very considerable hæmorrhage from the genital organs. The girl was seen by an assistant surgeon in the Fort, and the circumstances of the case having been reported to the police, it was discovered to be a conspiracy against the officer to obtain money. The old wretch was severely punished, and the child soon recovered.—(*Medical Times and Gazette, May* 21, 1859.)

CHAPTER II.

MEDICAL JURISPRUDENCE—INFANTICIDE AND ABORTION.

INFANTICIDE unfortunately is a crime which, in India, is very common. It is of two kinds. Female infanticide, as practised among some of the still almost savage hill tribes, and infanticide of illegitimate children. The former offence is gradually being stamped out, though there are occasionally instances of it brought to light; but the latter offence still prevails to a very large extent, and will probably continue as long as there exists a prohibition against the re-marriage of widows. This kind of crime is generally committed by the mother, immediately after the birth, and the body of the child is then concealed and secretly disposed of. Under Section 318, of the Penal Code, "Whoever, by secretly burying, or otherwise disposing, of the dead body of a child, whether such child die before or after birth, or during its birth, intentionally conceals, or endeavours to conceal, the birth of such child, shall be punished with imprisonment of either description for a term which may extend to two years, or with fine, or with both."

An essential point to be proved is: Was the body found that of a child fully developed? In order that the mother should be punishable at all, it must be proved that the child had arrived at such maturity that it might have been born alive (4 M. H. C. Rul., 63).

Although there are cases on record of women who have been delivered of living children in the fifth, sixth and seventh months, it is acknowledged by all the authorities, that it is rare that children born before the seventh month are born alive.

Taylor divides the uterine existence into two parts. Up to the end of the sixth month it is a fœtus, from the sixth to the ninth month it embraces a period "which may be considered to comprise some cases of abortion, and all cases of child murder." In this country it is generally impossible to obtain evidence regarding the exact time of a woman's pregnancy, and it is only from an examination of the body, that it can be decided, whether it is that of a fœtus, or a viable child. If the former, the woman might be convicted of having caused an abortion, but it is only when the latter is proved, that she could be convicted of infanticide, or of concealment of birth. The evidence generally produced to prove a woman's pregnancy, is that of neighbours, who have observed her figure, or that of a washerman, who says that for many months she has not menstruated, judging from the cloths sent to him to be washed. It would be clearly impossible, from evidence of this kind, to fix a date at which the pregnancy commenced. Under the English law, if pregnancy can be proved, it is not absolutely necessary for a conviction for concealment of birth, that the body should be found, provided there is satisfactory proof of the death; but it is probable, that few judges in this country would be willing to convict unless there was satisfactory evidence of the age of the child, for a woman could not be convicted of concealment of the birth of an inviable fœtus, and as it is quite possible for a woman to abort, or to miscarry, without having had resort to criminal measures, the mere finding of a fœtus would be no proof of criminal abortion. This remark may at first sight seem superfluous, but the following case, which was tried before me in Cuddapah, will show that it is not so. A woman was tried on a charge of infanticide, and also of having caused abortion. The evidence against her was of the washerman to prove her pregnancy, a cloth stained with blood, and the finding of a decomposed body in a well. This body was said to be fully developed, but the village authorities spoke of it as of a six months' development. The woman was examined by an apothecary three days after the alleged offence. There was then no lochial discharge, and nothing beyond a slight irritation of the parts. The mouth of the womb allowed the admission of two fingers. The apothecary, however, swore that he believed the woman to have caused abortion by mechanical means, but could give no reason for this opinion, except the slight irritation of the parts, *and that the people who brought her had told him so.* The woman did not deny having been pregnant, but said she had miscarried, and had thrown the fœtus into the well. She was acquitted. The charge of infanticide fell through, because there was nothing to show the cause of death, or that what was found was really a 'viable' child, and it was held that the slight marks of irritation were quite as likely to be caused by the natural abortion (miscarriage) of a fœtus so large as to be described to be of a six months' development, as by mechanical means calculated to produce abortion.

It must be remembered that natural abortions are very common, and, according to Mr. Whitehead's observation of two thousand pregnancies, one in seven terminated in abortion. In this country it is no doubt true that there are a very large number of criminal or violent abortions, and that an unfortunate widow, who has yielded to temptation, has every reason, through fear of exposure, loss of caste, &c., to resort to such means in order to save herself. At the same time it must be remembered, that everything and everybody is against her. These are probably suspicious of her immorality, in a small village community, where nearly everything that goes on is known; people are on the look-out, and even if she should miscarry naturally, she is sure to be suspected of having used criminal means to produce abortion. It is therefore necessary that there should be some direct evidence of the means used to commit abortion, since the unmarried woman is probably more liable to suffer from natural abortion than the married one. The former will endeavour to conceal her condition, and will often undertake work which the married woman, having nothing to conceal, would not undertake.

In a charge of infanticide, the first point to be settled is, whether the body is that of a child that was born alive. Generally speaking, the only test, which is applied by mofussil practitioners in charge of hospitals, is the hydrostatic test, *i.e.*, by putting the lungs into water. If they float, it is held that the child must have breathed, and must therefore have been born alive. It is, however, doubtful, whether this test is always as carefully made as it should be. Taylor recommends that, first of all, the lungs should be placed in the water entire, with the heart attached. If the lungs are able to float, together with the heart attached, there can be scarcely any doubt that the child was born alive. The lungs should then be cut into six or eight pieces, and it should be noted whether they contain bloody froth and crepitate under the knife, which is a test of respiration having taken place. These pieces should be placed in water, in order to see whether they float. If they do, they should then again be taken out and placed on the ground. They should be covered with a board, and the medical man should stand on the board so as to give an even pressure throughout. They should then again be placed in water, and if they still float, and if the lungs are fresh, *i.e.*, untouched by decomposition, the medical man may safely give it as his opinion, that the child had breathed and had been born alive. This point of decomposition, however, is one about which the medical witness should be carefully cross-examined, because if decomposition has set in at the time of the test being applied, the lungs will probably generate gases, &c., which will make them float. Now this is a question which is very seldom asked, and as, generally speaking, such examinations in this country are made twenty-four or thirty hours after a body has been found, where it probably had been hidden for some time, it is exceedingly likely that decomposition may have set in by the time the examination is made. If that is the case, no reliance can be placed upon the hydrostatic test even after the application of pressure. The following are Guy's objections to the hydrostatic test:—

(1) The lungs may sink, and yet the child have breathed, for the respiration may have been too imperfect to render any part of them buoyant.

(2) The lungs may sink, though respiration has taken place, in consequence of disease.

(3) The lungs may float, and yet the child not have breathed in consequence of artificial inflation; and, as Dr. Guy omits to add, of decomposition.

Of course, where there are witnesses who can speak to the fact of the child having been born alive, *ex. gra.*, that it cried, &c., this evidence would probably be sufficient without any medical evidence. It is, however, always advisable that the body should be sent to the hospital for examination, because there are many instances of children born dead, who cried before delivery, and a medical examination might show clearly that the child must have been born dead.

It must, however, also be remembered, that the fact of the lungs containing no air, is not a conclusive proof that the child was born dead; and, in the same way, the fact that they do contain air, is not a conclusive proof that the child was born alive. Taylor remarks: "The restoration of many children, apparently born dead, is a clear proof that many are born living, who might be pronounced dead, simply because breathing and life have been considered synonymous terms." It is a common practice with midwives, when, after the cord has been separated, the child lies motionless, to slap it gently on the back, so as to induce respiration. This is often continued for some time, and if not at once successful, water is sprinkled in the child's face, so as to make it gasp. The child then breathes, but it is clear that it must have been living previous to its first respiration; but that, after its existence became a separate and independent one, animation was for a time suspended. "In fact," as Taylor says, "it would appear that breathing is regarded as only *one* proof of life, and the law will therefore receive any other kind of evidence which may satisfactorily show that a child has lived, and make up for the proof commonly derived from the state of the lungs."

The next question of importance to be decided is: What was the cause of death? Marks of violence on the body are not necessarily proof that a child has been killed. "In general," says Taylor, "when children are murdered, the amount of violence used is considerably greater than that which is required to destroy them, whereby satisfactory proofs of the crime are occasionally obtained. On the other hand, the body of a still-born child, dead from natural causes, is often covered with lividities and ecchymoses; the fœtal blood does not coagulate with the same firmness as in the adult; hence the evidence derivable from the extent, situation and characters of marks of violence, is generally of too vague and uncertain a kind to allow of the expression of a medical opinion, that the child was living when the violence was offered to it. The characters which have already been described as peculiar to wounds, contusions, and fractures inflicted during life, may be met with in a child, whether it has breathed, or died without breathing.” It is possible also that the injuries found may have been caused in the act of birth. For instance, children are often born with the cord twisted round the neck; and it also often happens, that newly-born children are killed by the cord being twisted round the neck after birth. If the medical examination has been carefully conducted, there should be no difficulty in distinguishing between a natural and artificial twisting. If the lungs show signs of respiration having taken place, there can be little doubt that the cord was twisted *after* the child breathed. For an important case of this kind, see Illustrative Case, No. LXXX. At the same time, Williamson, quoted by Taylor, has drawn attention to an important fact. Referring to Price's case, in which the cord was tightly twisted round the neck, he states that, in similar cases which have occurred in his own practice, the child has breathed immediately on the birth of the head; but owing to the shortness of the cord, the child would have been strangled, unless he had divided it. Thus, then a child might die apparently strangled, and not be born alive, although it might have so breathed during birth, that the lungs would present all the characters of respiration.

As regards the mark on the neck, Taylor says, that if it is deep, broad, much ecchymosed, and there is extravasation of blood beneath, with injury to the muscles or windpipe, and ruffling or laceration of the skin, it is impossible to ascribe these appearances to accidental pressure by the navel string.

The bodies of newly-born children are frequently found with the skull fractured, and an important question arises, whether the fracture occurred from accident, or from intention. Cases have occurred in England of sudden delivery whilst the woman was standing, in which the child fell to the ground, the cord was ruptured, and the child was picked up dead. Cases of this kind are much more liable to occur in this country, where native women are generally delivered standing, and are frequently tied up by the hands whilst the labour is taking place. In the case of married women, there are, of course, attendants at hand, who will probably guard against any accident; but in the case of unmarried women, or of widows who are anxious to conceal the birth, it is clear that a fracture of the skull might easily be caused by accident. The ordinary native expression is, "the child fell out." A rather singular case of this kind occurred before me. A woman—a widow—was known to be pregnant, and as her time approached, a certain charitable neighbour was on the look-out. One evening the neighbour, who was watching, looked in at the door, and saw the woman standing up with a newly-born child at her feet. An alarm was at once raised, and the child was found dead with a fracture in the skull. The cord was ruptured. The ground on which the child had fallen, was hard. The woman said that she had suddenly been seized with labour; the child had "fallen out," and had died at once. The prisoner was acquitted, as it was considered right to give her the benefit of the doubt. The officious neighbour, by at once raising an alarm, prevented the possibility of any charge of concealment of birth being established. Taylor sums up his chapter on this point, with the following abstract:—

(1) The congestion of the head and face in a new-born child is not a proof of death from strangulation.

(2) That a child may be strangled during birth by the accidental twisting of the navel string round its neck.

(3) That the navel string, like any other ligature, may produce a livid or ecchymosed depression on the neck.

(4) The marks on the neck, arising from accidental causes, may resemble those which arise from strangulation.

(5) That the local effect of constriction on the neck, either by the navel string or any other ligature, is the same if the child be *living*, whether it has, or has not, breathed.

(6) That the effect is the same, whether the child has been *partially* or *entirely* born.

(7) That the effect of the ligature on the neck of a living child is the same, whether the navel string has, or has not, been severed.

(8) That a new-born child may die from strangulation, without this fact being necessarily indicated by ecchymosis on the neck. This depends on the nature of the ligature, and the amount of force used.

As regards other injuries, he says :—

(1) That a new-born child may die from violent causes of an accidental nature.

(2) That some forms of violent death are not necessarily attended with external signs indicative of violence.

(3) That a child may be accidentally suffocated during delivery.

(4) That the usual marks of death, from suffocation or drowning, are not apparent except in the bodies of children which have breathed.

(5) That the state of the umbilical cord may often furnish important evidence.

(6) That some females recently delivered, may have strength to exert themselves and to walk great distances.

(7) That a new-born child may speedily die from exposure to cold, or from want of food.

(8) That slight fractures of the bones of the cranium may arise from the action of the uterus on the head of the child during delivery.

(9) That women may be unexpectedly delivered while in an erect posture; the umbilical cord is, under these circumstances, ruptured, and the child may, or may not, sustain injury from the fall.

(10) That the violence found on the body of a child may be sometimes referred to attempts innocently made by a female to aid her delivery.

ILLUSTRATIVE CASES.

(Part III, Chapter II.)

LXXX.—*Accidental strangulation with the navel string.*

The following case is quoted by Taylor:—

A lady was in labour with her first child. The labour was of a lingering kind, owing to the size of the head; and the child came into the world dead. The navel string was found coiled three times round the neck, passing under the right arm-pit; and upon removing it, three parallel discoloured depressions were distinctly evident. These extended completely round the neck, and corresponded to the course taken by the coils. The child appeared as if it had been strangled. Had this child been born secretly, and the cord removed, this state of the neck might have created a strong suspicion of homicidal violence. Strangulation after birth could not, however, have been alleged, because there would have been no proof of respiration. When a blue mark is found on the neck of a child, whose lungs retain their fœtal character, *it is fair to presume,* ceteris paribus, *that it has been accidentally occasioned by the twisting of the umbilical cord during delivery.*

LXXXI.—*The same.*

Dr. Price contributed to the *Medical Gazette,* notes of a case in which the cord, which was short, was so tightly twisted round the neck of the child, that he was compelled to divide it before delivery could be accomplished. There was, in this instance, a deep groove formed on the neck, conveying the impression to himself and a medical friend, that, in the absence of any knowledge of the facts, they would have been prepared to say that the child had been wilfully strangled by a rope.—(*Medical Gazette, Vol.* 38, *p.* 40.)

LXXXII.—The following case is from Caspar:—The body of a mature new-born boy was found in a night chair. The placenta weighed 11 oz., and the child 6½ lbs. It was 18 inches in length, but the diameter of the head and shoulders were small, (3 × 4 × 4½ inches of the head, 4½ for the shoulders). The portion of the funis attached to the child, was 14 inches long, torn across with ragged edges, but tied. Beneath the pericranium, on the left parietal bone, were a few isolated ecchymoses, but no other trace of violence, internally or externally, was found. The body was perfectly fresh. Death had been caused by cerebral hyperæmia, and not by suffocation. Respiratory life was indubitable.

The fact of the placenta being found along with the child, the funis being torn; the small diameter of the head and shoulders, and the secret delivery, were in favour of the birth being precipitate. The ecchymoses on the parietal bone rendered it probable that the child had fallen on its head. Such a result was not likely to occur if the birth had taken place upon the night chair, and the child had fallen upon a soft semi-fluid mass of excrement. In this case, moreover, death would have been caused by suffocation, and not by cerebral hyperæmia. Accordingly, it was concluded, that this viable and live-born child had died, soon after birth, from cerebral apoplexy, produced by falling upon some hard floor at its birth, and that after its death it had been flung into the night chair to save the expense of burial, with a view to the subsequent complete concealment of birth.

LXXXIII.—Dr. Chevers gives the following description of the manner in which the umbilical cord is divided and dressed by native women in this country. In many parts the cord is not divided until after the placenta, or afterbirth, has come away. It is only tied with one ligature, near the child, and, before tying, the blood is either pressed towards the child or towards the placenta, according as the child seems lively or otherwise. The cord is generally divided by a piece of bamboo, and the fact of the cord being found with jagged edges, is therefore no proof of neglect.

In order to induce the mother to bring forth the after-birth, it is usual to put some hair into her mouth. This causes her to try and vomit, and the effort brings away the placenta. It is also usual to observe certain religious ceremonies before cutting the cord. A case is quoted, (Niz. Ad. Report, N. W. P., Feb. 1853), in which a female mendicant, of weak intellect, at Jaunpore, gave birth to a female infant, which she left in some straw where she had slept, and went begging. The civil surgeon examined the body, and could find no apparent cause of death. He considered it was probably caused by neglect, as the navel string had not been severed, the after-birth being still attached. The child had breathed, but death probably took place very shortly after its birth.

CHAPTER III.

MEDICAL JURISPRUDENCE—ABORTION—EXPOSURE OF INFANTS.

SECTION 312 of the Penal Code, runs as follows: "Whoever voluntarily causes a woman with child to miscarry shall, if such miscarriage be not caused in good faith for the purpose of saving the life of the woman, be punished with imprisonment of either description for a term which may extend to three years, or with fine, or with both; and, if the woman be quick with child, shall be punished with imprisonment of either description for a term which may extend to seven years, and shall also be liable to fine. *Explanation.*—A woman who causes herself to miscarry is within the meaning of this section." If this miscarriage is caused without the woman's consent, the person committing the offence is liable to imprisonment for ten years, or transportation for life; and if it is done with her consent, and she dies, to imprisonment for ten years.

It will be observed, that to render the offender liable to the increased punishment under Section 312, it is necessary to prove that the woman was "quick." Regarding the exact time when quickening takes place, there is a considerable difference of opinion, and it is impossible to ascribe an exact period. In the cases which ordinarily come before the criminal courts, it is of course impossible to ascertain the date at which pregnancy commenced. "Quickening usually takes place between the fourteenth and eighteenth week, but sometimes as early as the twelfth. It is a very fallacious sign; for these movements may not be perceived at all, or they may be confounded with the motions of flatus, changes in the position of the viscera, or sudden contractions of the muscles" (Guy). It is manifest, that in criminal cases, it can ordinarily only be ascertained from the statement of the woman herself, whether she was quick or not. It would therefore seem safe to follow Taylor in his division of uterine life into two portions, as mentioned in the previous chapter, *viz.*, that of a fœtus up to the sixth month, and that of a quick child from that time to the end of the pregnancy. It is probable, that if there is any evidence at all regarding the woman's pregnancy, there will be sufficient to fix the time approximately between four and a half to six months, and if the fœtus itself is found, the medical witness should of course be able to give a tolerably accurate guess at its age.

It is generally believed, that the offence of abortion is very common in this country. It is of course chiefly, if not entirely, practised by widows who wish to escape the consequence of an illicit connection. There are a variety of ways in which it is caused. Chevers enumerates the following: Arsenic—Amalgam of tin, Sulphate of soda, Silicate of potash; Sulphate of copper; wood charcoal; Capsicum seeds; Upang or "*Achyranthes aspera*"; Chitta "*Plumbago zeylanica*"; Lall chitra "*Plumbago rosea*"; root of *Nerium oleander*," 6 inches long, tipped with assafœtida; opium; a powder containing black pepper, burnt sulphate of copper and cantharides; assafœtida.

Although drugs to be taken internally are often administered, the most usual means adopted is, by introducing the Lall chitra branch into the mouth of the womb. This branch is generally rubbed with assafœtida. It must, however, be remembered, that assafœtida is also commonly used among natives in child-bed, either alone or in combination with other drugs, to keep cold out of the system, and also as prophylactic of tetanus, and to assist the lochial discharge. The mere fact therefore, of finding assafœtida in the house, should not be held as a proof that it had been used for a criminal purpose. Besides the above means, Chevers also gives the following:—

Unripe Pine-apple.—A green unripe one, half grown, is made into a pulpy mass, and administered internally with a small quantity of salt. This is efficacious only during the first three months of pregnancy.

Atrendo (*Calotropis Hamiltonii*).—This is used both internally and externally. The milky juice is mixed with flour and given as a pill; a rag is then dipped in the juice and folded round a small stick. About four and a half inches are introduced per vaginam. This plan is useful in all stages of pregnancy, and there is not much danger to the mother or to the fœtus, which latter may, in fact, be born alive if the step is taken at an advanced stage.

Lunka Suj (*Euphorbium nivulia*).—This is said to be far more efficacious than all the rest. A twig, about nine fingers' breadth long, and of appropriate size, is selected and well anointed with good assafœtida; and as the twig itself is soft, and consequently difficult to introduce per vaginam, it is rendered stiff and fit for use, by putting in its centre a thin bamboo stick. Nothing internally is needed, but the simple application of the stick effects the object in twelve hours. This method is useful at all periods of pregnancy. The fœtus is never delivered alive, but there is said to be no great danger to the woman.

Upang (*Achyranthes aspera*), the root which is used by the natives as a tooth brush, employed in the same way. Effect produced in from eight to twelve hours. It is certain in its action, and may be used at any period. The child is not necessarily born dead, and there is no danger to the mother at all.

Shet korobee (*Oleander*), used in the same way. If applied in the evening, fœtus is expelled during the night. Of use at any period of pregnancy, and there is no inherent danger to the woman or to the fœtus.

Sujna bark.—A decoction, mixed with black peppercorns, is given. This is very dangerous, and the woman, as a rule, dies with the fœtus.

The Lall chitra is also dangerous. The fœtus is always expelled dead, and the woman also frequently dies.

It may be remarked, that it is possible in the case of means being used, which are not ordinarily attended with danger to the woman or the fœtus, the question might arise, whether this would come under the head of a "miscarriage." If the fœtus is born alive, it seems doubtful whether it could so be called.

Dr. Chevers also enumerates various other drugs, which are given internally, in order to produce abortion, such as the seeds of the paw-paw tree; arsenic; pills of soda and carrot seeds; carrot seeds and mortar; the milky juice of the mudar;—other mechanical means are, the root of the tamarind tree (very common); root of the white oleander; the bruised nut of the marking-nut (*Semecarpus anarcardium*).

In May 1854, the body of a Hindu woman, who had died under suspicious circumstances, was brought to Dr. Chevers' hospital at Howrah, in a very advanced stage of decomposition. "The native doctor informed me, that when placed in the dead-house, it appeared in a natural condition. I, however, found the womb between the thighs of the corpse, evidently by the gaseous distention within, and lying beside it, and evidently having recently escaped from its cavity, the body of a fœtus of about four months, greatly decomposed, and a portion of the Lall chitra root, seven and a half inches long, and rather thicker than a common writing quill. This had been scraped, and was thickly coated with adhesive inflammatory deposit."

A similar case also occurred to Dr. Clementson at Berhampore, in 1866. In this case the woman was married, but her husband had been away for about three years; and a case is recorded (Patna) of the fœtus being expelled by the action of the gases, generated by decomposition whilst the body was being conveyed to the hospital.

It frequently happens that the stick used for causing abortion gets broken off and remains inside the womb, and eventually causes death by gangrene.

It is probable, that only very few of the cases in which abortion has been caused, come before the courts. When death follows, it is perhaps impossible to avoid an enquiry, but in the majority of cases, the operation is performed by old women, who practise it as a professional. A considerable amount of skill is employed in the manipulation, and where a means is employed, which is of no danger to the mother, it is probable that it leaves scarcely any traces behind, which would justify a medical witness in saying that a violent abortion had been caused.

In a recent case in England, a man was indicted for murder of a woman. It appeared that she, being pregnant, requested him to procure her an abortion, and that he, in consequence, procured for her a poisonous drug. He knew the purpose for which she wanted it, and gave it to her for that purpose; but he was unwilling that she should use it, and he was not present when it was taken. The woman died from the effects of the poison. The court held that the conviction could not be sustained, saying that it would be consistent with the fact of the case, that he hoped and expected she would change her mind, and would not use the drug (**Reg.** *v.* **Fretwell,** quoted by Mayne, Penal Code).

Under similar circumstances, adds Mr. Mayne, I conceive that no charge would be maintainable under Sections 314, 312, 313 or 315, but the prisoner would be guilty of abetting her to commit the offence.

There is a difference between the English law and the Indian law on one point, *viz.*: Under English law, if a person administers violence to a pregnant woman, or a potion, and brings on labour, in which the child is born alive, but subsequently dies on account of the bruises received, or the potion administered, he is liable for murder; under the Penal Code, he would be liable, under Section 315 or 316, to a term extending to ten years.

Taylor quotes a case which occurred in England, in which certain prisoners applied to a medical man to give them drugs, in order to cause an abortion. He informed the police, and then sold them some harmless drugs, and as it is not necessary, under the English law, that any specific injury should be done to the woman in order to complete the offence, the prisoners were tried for felony. In this case the medical man went too far, and his conduct called down some severe observations. There was no harm in his in-forming the police, but he ought to have refused to sell anything at all for such a purpose. In this country, under similar circumstances, the prisoners would probably be convicted of an attempt.

It must be remembered, that cases often occur when, owing to mal-formation of the pelvis, the medical attendant considers it necessary to bring on premature confinement. This operation should only be carried on after extreme caution has been used, and after a consultation with other practitioners, since otherwise the operator would lay himself open to a charge of wilfully causing abortion. And it is quite clear, that unless very great precautions are used, there would be a wide opening for criminal practices. In this country it is improbable, that for some time to come, such a plea would be raised, but medical education is rapidly spreading, and it may some day happen that each village has its trained medical practitioner, where there might be a temptation to an unscrupulous man to wilfully cause an abortion, and then plead the necessity of a premature confinement. Unless he could show good causes for the operation, the presumption would be against him. If the expulsion was caused in an early stage of gestation, the presumption would be very strong, as, in English practice, such a course is rarely had recourse to except between the seventh and ninth months.

Under English and French law, it is not necessary that there should be proof of pregnancy in order to establish the crime of abortion. A woman has been convicted of an attempt to cause abortion in a woman who was subsequently proved not to be pregnant, but to be suffering from ovarian disease. In the same way, if the woman was suffering under a morbid growth in the womb, such as *moles,* the person who has used the means with *intent,* may still be convicted of an attempt to cause abortion (Taylor).

As regards the blood in abortion, all the leading authorities remark, that there is no difference in the blood produced in abortion and menstrual blood. This question was referred to the French academy, and a report was made to the effect, that there was no method by which the blood of menstruation can be distinguished from blood discharged in abortion, or from blood in infanticide. Taylor, however, remarks, that the *liquor amnii* contains a considerable quantity of albumen, and that this liquid is calculated to stain and to stiffen the fibre of any stuff on which it has been effused. As gestation advances, the amount of albumen in the liquid decreases. At the fourth month it forms 10·77 per cent. of the liquid; at the fifth month 7·67; at the sixth month 6·67; and at the ninth month only 0·82 per cent.

Exposure of newly-born infants is a crime of very ordinary occurrence. It is seldom that any other points of a medico-legal importance will arise than have already been discussed. It is wonderful how long children exposed will sometimes survive. I remember a case, tried by me in Cuddapah, in which a woman was charged with causing the death of her newly-born child by throwing it into some prickly-pear bushes. The child was found next morning alive. The cord was not tied, and it had been injured by thorns. The bushes, in the midst of which it was found, were so high, that it must have been thrown high in the air over them. The child survived for more than a day, and then died of the injuries received, and exposure. The woman was convicted of murder, but the sentence was reduced.

As regards exposure, Mr. Mayne points out a very curious anomaly. In his remarks on Section 317, he says: In a recent case the following facts arose. A, the mother of a newly-born child, being herself too ill to move, sent B to expose it. It was held by Scotland, C. J., that A could not be convicted under this section, as *she* had not actually exposed the child, nor B, as she was not the mother; also that neither A nor B could be indicted for abetting the other, since as neither could have committed the offence, there could be no abetment by the other. A person who has the custody of a child, *merely for the purpose of exposing* it, cannot be indicted as a person "having the care of such child." This is a legal fiction with a vengeance, but it would seem, that though they might escape the penalties of Section 317 (exposing a child by a father or mother), B might very properly be indicted for murder, *i.e.*, causing death by doing an act with the intention of causing death; or, if death did not follow, with attempt at murder; and A might then be charged with abetment.

PART IV.

CHAPTER I.

POISONS.

What is a poison?

THE Indian Penal Code contains no definition of poison. *Taylor* defines it as "a substance which, when absorbed into the blood, is capable of seriously affecting health, or of destroying life." Guy defines it as "any substance or matter, solid, liquid or gaseous, which, when applied to the body outwardly, or in any way introduced into it, without acting mechanically, but by its own inherent qualities, can destroy life." This latter definition is framed especially to exclude such substances as powdered glass, steel, &c., which inflame and injure the internal parts. It seems, however, difficult to understand why these substances should be excluded. Beck says, that the "ancients considered everything as poisonous which produced malignant symptoms, and attacked directly what we style the vital principle." For the purposes of cases which come before the Indian criminal courts, no definition of poison would seem to be necessary, because any act done with the intention of causing injury, no matter by what means caused, is a punishable offence. If the act causes death, the offence becomes murder, or culpable homicide; and if the act does not cause death, but has been committed with intent to cause death, it would be an attempt to murder. If the act was intended to cause injury, and did cause injury, the offence would amount to grievous hurt, or simple hurt, according to the amount of injury caused. A person might therefore be found guilty of attempting to commit murder by administering a perfectly harmless substance, if only the person administering believed the substance likely to cause death, and intended that it should cause death. There is a widely-spread belief, especially in oriental countries, that diamond dust is a poison most fatal in its effects. Beyond tradition, however, there is no evidence whatsoever to show that there is any foundation for this belief, and what evidence there is, goes to show that diamond dust is a perfectly harmless substance. But a person, who believed in the dangerous properties of diamond dust, and who administered it with the intention of causing death, would be guilty of an attempt at murder, even though no injury should ensue. As an example of this, we may cite the celebrated case of the *Guicowar of Baroda.* What therefore is required in this country is, not only evidence as to whether the substance administered falls under the regularly accepted definitions of poisons, but evidence regarding the act of administering, and the intention of the administering person.

Manner of conducting enquiries in cases of suspected poisoning.

Cases of poisoning, in which the victims recover, are, comparatively speaking, rare, and the cases which generally come before a criminal court in this country, are those which have had a fatal termination. In such cases, the two important points to be proved are (1) the actual cause of death, and (2) who it was who caused it. As regards the first point, the most important evidence will be that of the chemical examiner, who alone is competent to say, from the result of his examination, whether any poison was discovered, and, if so, what. But important though his evidence is, there are many other points to which attention must be paid by the various officials and individuals connected with the case from the time of the death until the time of trial. So important are these points, that it very often happens that the life or death of the accused depends entirely upon the accuracy with which they have been noted.

We presume, that immediately after receiving notice of a suspicious death, the village authorities have sent to the nearest police station, and that an enquiry has been at once commenced. The following are the points about which the fullest information should be available. They have been given *inter alia* in the introductory chapter, but for facility of reference may by repeated here :—

(1) The exact time of death.

(2) When the deceased was last seen alive, and where.

(3) The exact attitude and position of the body when found.

(4) The position of all surrounding articles, such as bottles, papers, weapons, or spilled liquids. These articles should be collected and preserved.

(5) What the symptoms of the deceased were when they were first noticed, and how long they continued.

(6) How long after partaking of any meal, food, drink or medicine, did the symptoms occur.

(7) Did they intermit, or continue without mitigation until death.

(8) Secure any portion of the food or medicine which may be suspected to contain poison.

(9) Secure all matter vomited or evacuated.

Note.—When securing food or vomited matter, &c., be most careful to put each matter separately in a *clean* pot or vessel; do not take any old pot, or piece of pot, that may be offered; but insist upon being provided with a new and clean glass, or earthen vessel, which should at once be securely fastened and carefully guarded until it is given into the hands of the medical officer.

(10) Note the external appearance of the body, and all marks of violence, &c.

(11) Note any other suspicious circumstances, and all statements of suspected parties.

(12) Finally, having noted these points, and after having caused them to be entered in the mahazarnamah, or inquest, held by the village authorities, have the body *at once* taken to the nearest hospital or dispensary; accompany it there, and take with you all matters and articles connected with

the case. Be careful that no unnecessary delay occurs in this respect, for it is of importance that the body should arrive at the hospital before decomposition sets in.

Medical officer's duty.

Arrived at the hospital, the medical officer must at once commence the *post mortem*, and he will of course see that this is most carefully done. The medical officer's duty is to ascertain the cause of death, and he should be careful not to listen to any story that may be told him by the persons who bring the body, but should simply form his opinion on the facts which he is able to elicit from his examination. In cases of suspected poisoning, he has of course to send the stomach and the purged and vomited matter, together with any cloths, implements, &c., to the chemical examiner. Here, again, too much importance cannot be attached to the necessity of seing that these articles are put in clean vessels, and are safely and securely sealed. An instance has occurred, in which viscera have been placed in a vessel which had formerly contained arsenic, and had been carelessly cleaned. This was discovered by arsenic being detected on the *outside* of the stomach. Enquiries were made, and it was then elicited that the jar had not been carefully cleaned. Other cases have occurred, in which there have existed strong grounds for believing that the articles sent for examination had been tampered with whilst in transit, and arsenic inserted. Whilst on this subject, it is as well to impress upon sub-magistrates that arsenic in a soluble form, does not mean arsenic that has been digested. This is by no means an uncommon error on the part of native sub-magistrates, who, when they receive the chemical examiner's certificate, that arsenic in a soluble form has been found, at once conclude that the arsenic so found, must have passed into the stomach by the ordinary natural means of the mouth and the throat. This is not the case, and arsenic added to the viscera after the *post mortem* examination, would present exactly the same appearance as arsenic which had been administered by natural means. It would be reported as existing in a soluble form. It will therefore at once be seen how great is the importance of care and cleanliness in securing viscera and other substances believed to contain poison. One piece of carelessness in this respect might throw such doubt on the evidence, that a guilty man might possibly be acquitted; or, on the other hand, it would open the door to the possibility of an innocent man being found guilty.

Untraceable poisons.

It should be remembered, that although great advances have been made in the knowledge of poisons, there are still some poisons which cannot be detected. It does not therefore necessarily follow, that because the chemical examiner is unable to find any trace of poison in the remains submitted to him, no poison has been submitted. Again, in other cases the chemical examiner may certify that a poison has been administered, but at the same time he may be unable to say what the poison is. For instance, during the year 1883, Dr. Rogers, in his report, says, that "unidentified organic poisons were detected in eight cases * * *. By chemical processes, an unknown poison may be extracted in a comparatively pure condition from a large bulk of organic matters, and its detection therefore greatly aided, but so long as the substance cannot be identified, its poisonous character cannot be established by chemical tests."

Extracts from administration report.

The cases referred to by Dr. Rogers, were as follows:—

Bellary.—Only one case was received from this district. It was reported that the deceased, a man, *æt.* about 45 years, who had been suffering from piles, took some medicine from an old woman for their cure; and that after taking this medicine, he foamed at the mouth, vomited and purged, and died on the following day. The remainder of the suspected medicine was found to contain a powerful irritant, and a small quantity of a similar, and probably identical, poison was extracted from the stomach and vomited matters.

Godavari.—One case was received from this district, and in this case it was reported that a woman noticed a feeling of burning and numbness about the throat and mouth after eating a little of some sugar which had been given to her. Very small pieces of a root, possessing very powerful narcotico-irritant properties, were extracted from the sugar.

Kistna.—In the case received from this district, it was reported that the deceased man was in good health at 8 P.M. when he took his supper, and that immediately afterwards he was seized with symptoms of irritant poisoning, and died at midnight. At the *post mortem* examination, the alimentary canal was found to be intensely congested. An irritant poison was extracted from the vomited matters; but the examination of the viscera did not give conclusive results. The examination was, however, conducted under unfavorable conditions, as all the viscera were sent up in one very large jar; the new rules, which direct that the contents of the stomach and the small intestines should be packed separately, not having come into operation.

Kurnool.—Two cases were received from this district. In the first case, it was reported that three boys, after eating some jaggery given them by a man, became giddy and vomited. All three boys seem to have recovered. From the vomited matters a poisonous alkaloid was extracted. In the second case two persons, after eating some suspected food, complained of a bitter taste in the mouth, and a burning sensation in the throat. Vomiting seems only to have occurred after taking verdigris as an emetic. Six lots of food were forwarded for examination, and one lot was found to contain an irritant poison, but the quantity of poison present was not sufficient to destroy life.

Madras.—One case was forwarded by the Commissioner of Police. The history of the case was briefly as follows: On two occasions many people became sick after eating sweetmeats prepared by an old Mussulman woman for some religious ceremony. On the first occasion, the indisposition of the persons eating the sweetmeats did not give rise to any suspicion of foul play, as it was accounted for by the theory that Allah was displeased at the festival not having been observed at the usual place, *viz.*, thousand-lights bazaar. But on the second occasion, when sixteen people suffered from vomiting and purging, suspicion was aroused, and two lots of the suspected sweetmeats, with five lots of jaggery, ghee and sugar used in their preparation, and also two lots of purged matters, were submitted for examination. An organic irritant poison was found in one of the two lots of suspected sweetmeats.

Trichinopoly.—A case was received from the police hospital, of which the history was to the effect, that the deceased, a young man aged about 18, was suspected to have died from a narcotic poison of some sort. He was reported to have left his home at noon in good health, and to have been found insensible at 5-30 P.M., and to have died at midnight. No odour of any narcotic could be perceived about the mouth. Coma was complete, the pupils being slightly dilated, and there was some frothing at the mouth. A narcotic poison was suspected, as the father of the deceased sold opium and *Cannabis Indica.* A narcotico-irritant poison was extracted from the stomach contents, in which was also found a considerable quantity of a caoutchouc-like substance.

A case occurred in Cuddapah, which will illustrate this. A man died suddenly under very suspicious circumstances. There was enough evidence to warrant the arrest of a certain person, and if the chemical examiner had been able to certify to the finding of any poison in the stomach, there is little doubt that the prisoner would have been committed for trial. The chemical examiner, however, was unable to find any poison, and the sub-magistrate, considering that the cause of death had not been sufficiently established, released the accused. In a case of this kind, where the attendant circumstances are sufficient to raise a strong suspicion, it would seem to be advisable to commit the prisoner to stand his trial, even although the chemical examiner has been unable to certify to the presence of poison. For further remarks on this head, see the chapter headed Strychnine.

Poisons most generally used.

The following are the poisons which are most generally in use in this Presidency:—

Mineral poisons.—*Arsenic.*—For further details, see the next chapter.

Mercurial compounds.—Arsenic is sometimes administered along with mercury. The mercurial compounds most commonly employed are, corrosive sublimate, calomel and cinnabar.

The following memorandum of recent mercurial cases, has been kindly sent to me by Dr. McNally :—

Date of receipt. 1884.	Recent Mercurial Cases.	
July 8 ...	... Kumbakonam—fatal *	All corrosive sublimate, unmixed.
August 20 ...	... Mayaveram—fatal *	
August 28 ...	... Satur—recovery	
September 1...	... Villapuram—recovery	

Nitric acid occurs very rarely, but was found, during 1883, in two lots of coffee received from the Commissioner of Police in a case of attempted poisoning, in which it was suspected that some strong mineral acid had been used.

Organic poisons.—*Aconite* was detected in two cases in 1883 (one fatal), and four cases in 1882 (three fatal).

Dhatura was detected in two cases in 1883, and in one only in 1882.

Gunjah was detected in three cases in 1883, and in 1882 there were five cases with symptoms of gunjah.

Nux vomica was detected in five cases in 1883, of which four were fatal.

Oleander was detected in two cases in 1883 (one fatal), and in three cases in 1882 (one fatal).

Opium was detected in four cases in 1883 (three fatal), and in five cases in 1882 (all fatal).

Plumbago zeylanica.—The use of this poison is by no means uncommon; five cases occurred in 1882, and three in 1883.

Details of these poisons will be found under their separate heads.

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* It is significant that these two places are close together.

The following table of cases of poisoning in the North-West Provinces, during the last five years, has been kindly sent to me by Dr. Thomson, the Chemical Examiner.

Year.	Irritant.			Narcotic.			Other Poisons.		Residue, general suspicious cases.	Total for each year.
	Arsenic.	Copper and other metals.	Not detected.	Opium.	Dhatura.	Not detected.	Detected.	Not detected.		
1879	26	3	18	16	20	19	6	3	35	146
1880	39	4	17	17	25	33	5	...	26	166
1881	26	3	35	16	9	14	3	2	44	152
1882	28	1	24	18	11	21	9	2	37	151
1883	36	...	24	21	14	17	11	4	42	169

MURRAY THOMSON, M.D.,
Chemical Examiner.

Allahabad,
The 12*th September* 1884.

CHAPTER II.

◆

POISONS—IRRITANTS—ARSENIC.

Three classes of poisons.

Poisons are divided into three classes, according to their mode of action on the system, *viz.* :—

Irritants.
Narcotics.
Narcotico-irritants.

For the purposes of this book, however, it seens to be preferable to treat them as—

(1) Mineral poisons.
(2) Acids.
(3) Vegetable poisons.
(4) Animal poisons.

Mineral poisons.

Irritant poisons belong, for the most part, to the mineral kingdom; a few are derived from the animal and vegetable kingdoms, but they are not often made use of for criminal purposes. The action of all irritant poisons is the same; by irritating the stomach and intestines, they cause violent purging and vomiting, generally accompanied by intense pain in the abdomen. Many of these poisons possess corrosive properties, such as the mineral acids, caustic alkalies, corrosive sublimates, &c. The presence of these is generally at once detected in the act of swallowing, as there is an acrid and burning taste from the mouth down the œsophagus to the stomach; some irritants, however, do not possess any corrosive action, and some, such as arsenic, scarcely any taste.

Arsenic, number of cases in 1883.

Arsenic.—This is by far the commonest poison employed in this country. "During the year 1883 there where, in the Madras Presidency, thirty-one single, and fourteen multiple, cases of poisoning by arsenic, involving eighty-seven persons as against twenty-four single, and twelve multiple, cases in the preceding year. Of the eighty-seven persons affected, forty-nine were men, twenty-eight women, and ten children, of whom, twelve men, eight women and six children, died. Two of the cases seem to have been accidental, and two suicidal. The largest quantity of arsenic, proved to have been taken by any one person, *i.e.*, detected in such viscera and evacuations as were received for examination, was equivalent to 56·37 grains of arsenious oxide in a suicidal case; the smallest quantity estimated being 0·01 grains in a murder case. The average amount found was 3·7 grains. The duration of fatal cases was reported to have varied from less than one hour to two days. As usual in a few cases, arsenic was found to have been administered, combined with preparations of mercury."

"There were also nine cases of detected attempts at poisoning by arsenic, making a total of fifty-four arsenical cases, against forty-three cases in the previous year. Two of these cases are of sufficient interest to merit special notice. One, which was sent up from Cuddapah, was remarkable for the speediness with which death occurred. The victim, a man in good health, was reported to have vomited three times, and to have died in convulsions within an hour after taking some suspected toddy. Orpiment was seen on the surface of the stomach, and found in abundance in some earth scraped up from where some of the suspected toddy was spilled. (This case, which was tried before me, will be alluded to further on.")

"The other case is that of the *Kimidi Maharani.* White arsenic, finely ground, was given in a draught of some kind by the durbar physician. An informer communicated with the police just in time to prevent the cremation of the body. The stomach and a small piece of liver, with some pieces of soiled bedding, were forwarded for examination. From the viscera, the total amount of white arsenic extracted was seven-tenths of a grain. This quantity, though actually not very great, was relatively large, considering that it was extracted from but a small portion of the body of the deceased. A very large number of native medicines, stated to have been used by the physician during his treatment of the deceased, were submitted for examination. And for the defence it was alleged that red arsenic had been administered to the deceased for some days, and also aconite and veratria shortly before death occurred; and that death might therefore have been caused by the cumulative effect of the arsenic given medicinally, assisted by the medical doses of aconite and veratria. But no traces of aconite or veratria were detected in the stomach, and moreover no arsenic could be detected in the medicine alleged to contain red arsenic, and also if red arsenic had been administered, it would not have been converted in the body into white arsenic."—(Chemical Examiner's Report for 1883.)

Arsenic is most commonly met with in one of the three following forms :—

(1) White or common arsenic, arsenious oxide, arsenious acid, ($As\ O_3$).

(2) Red arsenic, realgar, arsenious bisulphide, ($As_2\ S_3$).

(3) Yellow arsenic, orpiment, King's yellow, arsenious sulphide, arsenious trisulphide, ($As_2\ S_3$).

These three substances may readily be distinguished by their colors.

Realgar and orpiment are both insoluble, but white arsenic is sparingly soluble in water.

"Insoluble arsenic" may be taken to include realgar, orpiment, and certain other combinations (some *arsenites* and *arsenates*) of arsenic, which are insoluble in water.

Soluble are much more poisonous than insoluble combinations.

In cases of criminal poisoning by arsenic, white arsenic is almost invariably employed; and it is commonly administered in an undissolved state, as a powder mixed with articles of food.

The symptoms vary according to the form of the poison, "whether solid, vaporous or soluble; according to the condition of bodily health of the person taking it, and according to the manner in which it is introduced into the animal economy, whilst they are also in no small degree modified by individual peculiarities of organization and by habit, as, for instance, in the arsenic-eaters" (Blyth).

Arsenic-eaters.

Arsenic-eaters are common in this country, and it is regularly eaten by some persons, not only as an aphrodisiac, but also because it is supposed to add a portliness to the figure. To horses it is frequently given to improve their condition. In Europe it is eaten by some of the mountaineers in Lower Austria and Styria, and Messrs. Maclagan and Rutter, who visited Styria in 1865, say that they have first measured, and then seen men swallow doses of from five to six grains. On examining the urine of these persons, two hours afterwards, abundant evidence of its presence was found, but the men did not exhibit the slightest symptoms of poisoning. Arsenic proves fatal, whether taken externally or internally; and, in either case, traces of the poison are found in the stomach.

Externally applied.

If applied externally, where the skin has been abraded, its action is more certain and immediate, but it has proved fatal where there has been no abrasion. A few years ago a large number of poisonings took place in England amongst children, owing to violet powder having been adulterated with arsenic, and Taylor mentions the case of a man who burnt arsenical pyrites at the door of a small room where seven children and an infant were sleeping. The children were removed and recovered. The infant was seized with diarrhœa and vomiting, and died in twenty-four hours. Cases of partial poisoning have also occurred from inhaling minute grains of arsenic, disseminated from a wall paper, in the manufature of which arsenic had been used. In persons poisoned by arsenic externally applied, the poison leaves traces in the stomach similar to those caused by swallowing the poison. In experiments made upon dogs, where arsenic was applied to wounds, and the dogs were prevented from licking it, death has occurred in a few hours, and the stomach has been found more highly inflamed than where a similar dose had been given internally.

White arsenic.

In this country, the ordinary form in which it is used is as a white powder, and taken in this manner it has scarcely any, if any, taste. If mixed in large quantities, the food is said to acquire a roughness of taste. As a powder, arsenic can be purchased in almost every bazaar.

Symptoms.

The symptoms of poisoning by arsenic in the acute form, are almost exactly the same as those of cholera, and as, generally speaking, the poison is administered in doses far larger than is necessary to destroy life, it is the acute form which is most ordinarily met with. There is an acrid feeling in the throat with nausea; vomiting soon sets in, the ejected matters being at first composed of the substances eaten; later they may be bilious and even bloody, or composed of a whitish liquid. Diarrhœa follows and accompanies the vomiting; the motions are sometimes like those met with in ordinary diarrhœa, or in cholera, and sometimes bloody. There is coldness of the extremities, with great feebleness, and the pulse is small and difficult to feel. The face, at first very pale, takes a bluish tint, the temperature falls still lower; the patient sinks in collapse, and death generally takes place within twenty hours after the taking of the poison. One of the most rapid cases is the one mentioned by Dr. Rogers, in the extract given *ante*. In this case the poison was given in some toddy about sunset (in the middle of the year). The deceased had to walk about a mile home, was seized with vomiting on the way, and almost immediately on arrival at his house, fell into a state of collapse. He vomited three times, and died before seven o'clock the same evening, so that death must have taken place within an hour from the time when the poison was administered. The amount of arsenic found in the viscera was 1¼ grains, and in the vomited matter $\frac{14}{1000}$ of a grain. In the earth which had been scraped up from where the liquor had been spilled, seventeen (17) grains were discovered! It is therefore probable that only a small portion of the vomited matter was sent for examination, or that the greater portion of the dose had been vomited out before he reached home.

Where a large dose like this is given, which takes an immediate effect, generally far less arsenic is found in the stomach and viscera than in the case of a smaller one. In the same way, since the absorbed arsenic is passed out of the system by the urine, and the unabsorbed is evacuated by the bowels or vomit, if repeated small doses have been given over a considerable number of days, only a very small trace may be found after death. The fact of a small quantity being found in the body, which, under ordinary circumstances, would not be a fatal dose, cannot be taken as a presumption that death was not due to the arsenic. All that can be said is, that the arsenic found in the body after death, is all that remains of the dose given..

Recoveries—Native antidote.

Cases often occur, in which, from the examination of the vomited matter, it is clear that a large dose must have been given; but, strange to say, the persons affected, recover. Early in 1884, at one sessions at Cuddapah, there were three cases of poisoning by arsenic. In one case the poison was given to two children, in another to an adult, and all three recovered. The third case proved fatal. In both the cases where there were recoveries, a similar antidote had been given. This was described as being a mixture of the juice of the red cotton flower (in which two three-pice pieces had been placed) and cowdung. In another case it was human excrement that was mixed. In the case that proved fatal, no antidote had been given. It is peculiar, that in both the cases where this antidote was given, there was a recovery, since it is impossible to suppose that, except as an emetic, it could have been of much use, though the copper coins would, to a certain extent, act as an antidote, for dissolved arsenic would be precipitated on copper.

False charge of poisoning.

In cases, however, where there is a recovery from what, by examination, appears to have been a large dose, great caution should be used, so as to prevent the possibility of a false charge being established. There can be little doubt that the value which is attached to the chemical examiner's certificate is getting widely known, and the manner in which this valuable evidence is obtained, gives an opening to a false charge, which has all the appearance of being true, because backed up by unimpeachable evidence. I will give one case as an example. It was tried before me during 1884.

A woman was charged with having come into her neighbour's house and mixed arsenic with his food. The man had formerly been on terms of intimacy with her, which he had broken off on his marriage with a young wife. The prisoner, in her defence, said, that subsequent to the marriage, he had continued, or had proposed to continue, the intimacy. The accusation was, that the woman had come into the house whilst the rice was being cooked; had sat down near it; had lifted the lid, and stirred the contents with her finger. Soon afterwards she went away. As soon as the husband ate the rice, he was seized with vomiting. As is customary in this country, the husband ate first, but he was attacked before anyone else ate the food, and therefore the dose was probably a large one. He was taken to the village choultry, where he vomited several times, the vomit being preserved in an ordinary pot. Next day he recovered. In the vomited matter, some six grains of arsenic were discovered. There were several witnesses who spoke to the prisoner having meddled with the cooking pot, and there were other suspicious circumstances against her. She was convicted of an attempt to commit murder, and the conviction was upheld. The woman was undefended, but if she had been defended, a strong case might have been made out on the possibility of a false complaint. The intimacy would cut both ways. It *might* either be a reason for the prisoner to try and get rid of the young wife; or it *might* be a reason for the wife to get rid of the prisoner. If the whole thing had been a deep-laid plot, the prisoner *might* have been asked into the house; an ordinary emetic *might* have been mixed with the food after she had gone, and then, when the husband began to vomit, some arsenic *might* have been mixed with the vomited matter by the wife, or her friends. There would then have been a whole chain of evidence complete, backed up by the chemical examiner's certificate. In this case I have no doubt that the prisoner was rightly convicted, but in a country like India, where the people are so ingenious in the fabrication of false charges, there is always the possibility of such a punchayet gave a unanimous verdict that the child had died of a disease called "Balapapa Chinna," the magistrate directed the viscera to be forwarded to the chemical examiner. A considerable quantity of white arsenic was found in the stomach.

Arrest of decomposition.

It has often been noticed, both in Europe and in India, that in cases of poisoning by arsenic, the stomach resists the progress of decomposition even long after all other portions of the body have yielded to it. Dr. Chevers mentions one case, in which arsenic was found in two bodies after ten months' interment without coffins.

Cattle-poisoning.

Cattle-poisoning, by arsenic, is a crime of frequent occurrence, and is generally practised by the chucklers who are entitled to the skins of all animals that die in the village. During the year 1883, Dr. Rogers says, that sixty-three cases, involving seventy-four deaths, were sent to him for examination. In forty of these cases poison was found, and in thirty-nine cases the poison was arsenious oxide. There were besides sixteen cases in which poison was suspected, and the food forwarded for examination. In thirteen of these, arsenious oxide was found, and in one, arsenious oxide, mixed with mercuric salt. Where there is reason to suppose that this crime is being practised, I have found it is effectually stopped by ordering that all bodies of deceased cattle be buried in a mixture of quicklime. This destroys the skin, and the chucklers, having no longer any benefit to gain, discontinue the practice. Cattle-poisoning is often had recourse to from feelings of spite and enmity. The crime seems to be equally prevalent all over India, and from year to year it is probable that increased detection will go to swell the figures, until it is finally put a stop to. At present, increase of the figures does not argue an increase of the crime, because it is probable that many cases of cattle-poisoning are unreported.

Accidental deaths and unrestricted sales.

Deaths from arsenic-poisoning frequently occur from mistake, and it is a matter for surprise, that such cases are not of more frequent occurrence. There is no restriction in this country on the sale of poisons, and any person can buy as much as he likes without a question being asked him. Native drug-sellers are in the habit of keeping their medicines without any labels or distinguishing marks, and when we find that, in spite of all the precautions which the law in England and in Europe lays down, mistakes are of by no means rare occurrence, it would seem high time that some legislative enactment should be introduced. It has been found possible to check the sale of saltpetre and opium, and the books of the traders contain a full record of all sales. Various writers in India have frequently urged that a similar restriction should be put upon the sales of poisons, and especially of arsenic, which is so readily obtainable. The public press has advocated the same thing over and over again, but up to the present time nothing has been done. A law, similar to that in England, is required, under which all sales can be traced, and when arsenic is sold in large quantities for purposes of trade, it should be mixed either with soot or with indigo.

The quantity of arsenic required for a fatal dose is estimated, by Taylor, at from *two* to *three* grains. The smallest quantity proved to have been taken was two grains. *Guy* says that recoveries have taken place from doses of half an ounce. As mentioned before, it must always be remembered, that the amount found in the body is no test of the dose taken. It is only a proof of what remains in the body.

CHAPTER III.

ANTIMONY AND OTHER METALLIC POISONS.

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Antimony.

Antimony.—This is a poison which appears to be seldom used in this country, though occasionally cases occur in which the poison has been taken in the form of tartar-emetic. Dr. Chevers only mentions three cases, all of which appear to have been accidental. The symptoms are as follows: A metallic taste in the mouth, repeated vomitings, which are sometimes bloody; great faintness and depression, pains in the abdomen and stomach, and diarrhœa. If the case is to terminate fatally, the urine is suppressed, the temperature falls, the face becomes livid, delirium and convulsions supervene, and death occurs in from two to six days. When large doses have been administered, there may be a complete absence of vomiting, which can, in such cases only, be produced by artificial means. When there has been considerable vomiting, it is possible that no traces of the poison can be found in the stomach. The vomit should therefore be carefully preserved. In cases of slow poisoning by antimony, the poison is mainly passed out by the urine, and, if possible, two or three days' secretions should be preserved.

Symptoms.

Antidotes.

The antidotes are any infusion containing tannin, such as decoctions of tea, oak-bark, &c., for the salt which has been expelled by vomiting, may in this way be decomposed and rendered harmless (Blyth). The treatment of acute poisoning, which has proved most successful, has been encouraging vomiting by tickling the fauces, giving strong green tea and stimulants. If the stomach has not been emptied by vomiting, use the stomach pump, or give hypodermic injection of apomorphia. Follow this with doses of strong tea, or give half a drachm of tannin, or gallic acid, in warm water. Give also demulcent drinks and stimulants in small doses, frequently repeated. Keep the patient warm by hot blankets and wraps. The interrupted galvanic current to the heart may be useful (Blyth).

Medicinal uses of.

Antimony is used in large doses in veterinary practice, as much as 90 grains of tartar-emetic being often administered to a horse in his gruel three times a day. It is supposed to be fattening. Medicinally it is employed as a vascular depressant, diaphoretic and expectorant. Tartar-emetic is given in doses varying from $\frac{1}{16}$ to one grain, and as an emetic from one to two, or three grains. It should never be used as an emetic in suspected poisoning, as its presence would confuse the investigation. *Therefore,* in a trial for poisoning by antimony, care should be taken to find out whether tartar-emetic had not possibly been given medicinally.

The leading English cases for poisoning by antimony, are those of Dr. Pritchard, Dr. Smethurst, and Thomas Winslow; a small portion of antimony was also found in the body of Cook in the famous *Palmer* case, but in this case the jury found the prisoner, Palmer, guilty of having caused death by administering strychnia.

Mercury.

Mercury.—During 1883 "mercurial compounds were detected in the forms of corrosive sublimate, calomel and cinnabar" (Chemical Examiner's Report for 1883). There were four cases of mercuric salt, and one of calomel. Mercury is also occasionally mixed with other poisons. Chevers says, that cases of poisoning "by those medicinal preparations of mercury which are common in India,—as by *red sulphuret* (factitious cinnabar), *hingool* (vermillion), *shengerf-darshikna,* similar to corrosive sublimate, and by *rascapur,* a mixture of calomel and corrosive sublimate, are not likely to call very frequently for the opinion of the medical witness." Of the four cases spoken of by Dr. Rogers, as having occurred in 1883, none were fatal. Mercury, if taken perfectly pure into the stomach, is considered to be not poisonous, and as much as a pound or more has been taken without injury. The poison acts most fatally when inhaled as a vapour, or in a finely-divided form when rubbed into the skin. Leiblinger records a case, in which three persons were found dead in bed; the day before they had rubbed into the body, for the purpose of curing the itch, a salve containing 270 grammes of mercury, finely divided. The symptoms are as follows: In mild cases there is a pallor, languor and soremouth (from slightly inflamed gums), fœtid breath, and disorder of the digestive organs. In acuter cases there is an inflammation of the gums, and indeed of the whole mouth, and salivation, which is sometimes so profuse, that as much as two gallons of saliva have been secreted daily. The saliva is alkaline, and has a bad odour. The gums are raised into slight swellings, which gradually enlarge and coalesce. The teeth decay rapidly, they become loose, and some may be shed, and sometimes portions of the jawbone come away. There is also nausea and vomiting, pain in the stomach, and diarrhœa alternating with constipation. Mercurial tremor may follow, or accompany the above state, affecting all the limbs, the face, and the muscles. This deepens into paralysis, and the patient dies from exhaustion. In 1810 a remarkable case occurred on board H.M.S. *Warrior*. A Spanish ship, laden with mercury, had been wrecked on the Coast, and the British sailors saved from her some 130 tons of mercury. This was stored in the hold, but the skins in which it was packed, rotted, and several tons of mercury escaped and were diffused through the ship as vapour. In three weeks two hundred men were affected with ptyalism, ulceration of the mouth, partial paralysis, and, in many instances, with diarrhœa. All the stock died—mice, cats, a dog, and even a canary. Three men were attacked with consumption, a disease which mercury frequently brings on. One got confirmed phthisis, two died from gangrene of the cheeks and tongue, and one woman, confined to bed with a fractured limb, lost two of her teeth, and many exfoliations of the jaw took place.

Symptoms.

Antidotes.

The *antidote*, as given by Blyth, is as follows: Empty the stomach by the tube or pump, and wash the organ out with plenty of white of egg, dissolved in water and milk. If the stomach pump is not at hand, then give emetics, such as the solution of apomorphia, hypodermically, in from four to five-drop doses, or a zinc sulphate emetic, or mustard, or ipecacuanha. Probably violent vomiting is already present, then stomach tube, or emetics, are unnecessary; but in any case give plenty of albuminous fluids, such as white of egg, in water and milk. If neither of these is at hand, chop any fresh meat up as finely as possible in a short space of time, diffuse in water, and administer. Follow up with demulcent drinks, such as barley water, flour and water, &c.

Pain may be allayed with a little opium or morphia. Stimulants are admissible, if necessary.

Medicinal uses of.

Mercury occurs in the following more common patent and quack medicines: *Mordant Norton's drops, Solomon's anti-impetigines, Poor Man's friend, Brown's lozenges, Cluny's worm lozenges, Storey's worm cakes, Wright's pearl ointment, Keyser's pills, Mitchell's pills,* also in many antibilious pills.

Statistics.

In 1880; the total number of poisonings, by mercury, in England, were 22 males and 15 females: total 37, or about 2·3 per cent. of the total deaths from every kind of poison. 46 per cent. of the cases were suicidal.

In all cases of suspected deaths by mercury, too much stress should not be laid upon the detection of mercury in the body, for, as Dr. Taylor says, "Nothing is more common than to discover traces of mercury in the stomach, bowels, liver, kidneys, or other organs of a dead body."

Copper.

Copper.—Cases of poisoning, from copper, are generally accidental. They occur frequently in this country, owing to the cooking vessels not being properly tinned. Chevers says, that he knew a family, in which very severe cases of poisoning from this cause—not fatal—took place twice in two years. Copper is frequently used as a means of adulteration, especially in the case of tinned vegetables, such as peas, so as to give them a bright green colour. During five years ending 1880, only seven deaths occurred in England. The symptoms are those of a powerful irritant poison; there is immediate and violent vomiting; the vomited matters are of a greenish colour—a green distinguished from bile by the

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colour changing to blue on the addition of ammonia. There is pain in the stomach, and in a little time affections of the nervous system, as shown by spasms, cramps, paralysis, and even tetanus. Jaundice is a frequent symptom if life is prolonged sufficiently to admit of its occurrence. For the antidote, give emetics, as in the case of mercury. Pain may be allayed by opium or morphia. Antidote.

It should be remembered, that all country arrack contains a trace of copper from the worm of the still. This should be borne in mind when search is being made in cases of suspected poisoning, otherwise a suspicion might be raised that copper had been used as a poison, whereas, in reality, its presence may only be due to arrack.

Verdigris (*Copper acetate*) is a common form in which copper is administered, and it should be noted that verdigris forms one of the native antidotes for arsenic.

Lead, zinc, and iron are so rarely used in this country as poisons, that for the purposes of this book there seems to be no necessity to allude to them.

CHAPTER IV.

ACIDS AND ALKALIES.

Sulphuric acid.

Sulphuric acid occurs very rarely in poisoning cases in this country. Dr. Mouat only met with one case, in which sweetmeats had been the means used to administer the poison. Dr. Chevers appears also to have met with one case only, of a young woman who had swallowed a mouthful, but states that several cases have occurred in Calcutta, though without mentioning details. Sulphuric acid is often used in the houses of Europeans in the mofussil, for filling ice machines, and cases might therefore occur. I can find no record of any such cases having been submitted to the chemical examiner.

The amount required for a fatal dose is not accurately known. The smallest dose on record, which has proved fatal, is quoted by Christison, *viz.*, sixty grains, and Taylor records the case of a child that was killed by a dose of twenty drops. Blyth says, that if it were asked in a court of law what dose of concentrated sulphuric acid would be dangerous, the proper answer would be: So small a quantity as from two to three drops of the strong undiluted acid might cause death, more especially if conveyed to the back of the throat; and adds, that it may be laid down, that all quantities, even the smallest, of the strong undiluted acid, come under the head of hurtful, noxious and injurious.

Symptoms.

Sulphuric acid is sometimes used criminally to cause disfiguring burns on the face. Its external effects are not widely different from those attending scalds, or burns from hot neutral fluids. There is a destruction of tissue, not necessarily deep, for the acid is immediately wiped off; but if any should reach the eye, inflammation, so acute as to lead to blindness, is the probable consequence. The skin is coloured at first white, at a later period brown, and part of it may be, as it were, dissolved. The internal effects are immediate and acute. The pain, however, is not constant, since in a few recorded cases, no complaint of pain has been made; but these are quite exceptional, and, as a rule, there will be immediate and great suffering. The tongue swells, the throat is also swollen and inflamed, swallowing of saliva even may be impossible. If the acid has been in contact with the epiglottis and vocal apparatus, there may be spasmodic croup, and even fatal spasm of the glottis (Blyth).

The corrosive action extends right down to the stomach. There is extensive vomiting, and, the whole of the lining membrane of the gullet may be thrown up. Death may take place within from twenty-four to thirty-six hours, but when large doses have been taken on an empty stomach, the latter may be absolutely dissolved, the same symptoms, as of perforation of the stomach, may set in, and the death may be very sudden.

Treatment.

The treatment to be of any good should be immediate: finely-divided chalk magnesia, or sodic carbonate, may be used, dissolved in water. Wall plaster will often be the first thing to come to hand, and, under any circumstances, enormous doses of water should be given, so as to dilute the acid. The stomach pump should not be used. In the case quoted by Dr. Chevers, nourishment was given entirely by nutritive enemata for six weeks, with success.

Hydrochloric acid.

Hydrochloric acid.—I can find no recorded cases of poisoning by this acid in this country. Its effects are similar to those of sulphuric acid, except that it produces white stains upon the skin.

Nitric acid.

Nitric acid.—Dr. Rogers speaks of two cases having occurred, during 1883, of nitric acid having been found mixed with coffee.

Chevers appears to have met with no cases of poisoning with nitric acid, and such cases are probably very rare in this country. The smallest fatal dose on record is two drachms, which killed a child of thirteen (Blyth). The vapour, if inhaled in large quantities, proves fatal, and cases have occurred, in which a vessel, containing the acid, has broken, and death has been caused by the fumes having been suddenly inhaled. The symptoms are almost exactly the same as those of sulphuric acid.

Ammonia.

Ammonia.—Cases of poisoning, by ammonia, are also very rare in this country, and would probably only occur from accident. The fumes of ammonia are as dangerous to life as those of nitric acid. Ammonia is largely used in the *Carré* ice machines (boiling process), and accidents are liable to happen. An accident very nearly happened to the author, whilst looking after a machine reported to be out of order. There was a slight escape, and, whilst investigating the cause, the machine suddenly burst. It was luckily in the open air, and we were all on the windward side, but the vapour shot out in a fountain about fifteen feet high, causing an intense pungently suffocating smell. Had it occurred in a confined room, some serious injury might have been caused. Falck, quoted by Blyth, has found, throughout literature, notices of only thirty cases of poisoning by ammonia. In two cases it was used with a homicidal purpose, in eight with suicidal intent, and in the remainder the cases were accidental.

Symptoms.

Symptoms are a sense of constriction in the epigastrium, burning in the throat and giddiness; vomiting; pulse, small and frequent; face, pale; the mouth and throat, strongly reddened with increased secretion and feeling of suffocation. In strong doses of from five to thirty grammes, death may ensue as quickly as from Prussic acid. A case is recorded of a man, who, having been bitten by a mad dog, took a mouthful of spirits of ammonia, and died in four minutes.

Antidote.

Antidote.—If there is no vomiting, it should be produced by giving plenty of lukewarm water, after which give diluted vinegar, or the juices of lemons, limes or oranges; olive oil, the white of eggs, barley water, arrowroot, and always plenty of water. If there is œdema of the glottis, tracheotomy should be performed to prevent suffocation. In poisoning by ammonia, with croupous respiration, keep the room warm, and fill it with steam by means of a bronchitis kettle. Relieve pain by small doses of opium injected sub-cutaneously (Blyth).

Caustic potash and soda, neutral sodium, potassium and ammonium salts, are so rarely used in cases of criminal-poisoning in this country, that they scarcely come within the scope of this book.

Petroleum.

Volatile acids, and those capable of being distilled from neutral or acid liquids.—Under this head comes petroleum, with all its various products, such as cymogene, gasolene, benzene, benzoline and naptha. I am not aware that as yet any cases of poisoning have occurred from any of these liquids, and I shall not therefore further notice them, except to state that, should such cases occur, they will probably be accidental or suicidal, and the antidote which should be used, is the stomach pump and emetics; a sub-cutaneous dose of atropine and alternate douches of hot and cold water to the chest, if necessary. The heart to be maintained by mild interrupted shocks of the battery (Blyth).

Camphor.

Camphor.—Cases of poisoning, by camphor, are rare both in Europe and in this country, but Chevers records two cases. In one case, which proved fatal, the camphor was found administered in sweetmeats, and the man died two days afterwards. A lump of camphor was found in the stomach. The other case is of a boy, who took a pice-worth of camphor as a cure for dyspepsia and flatulency. The symptoms were, "giddiness and a burning sensation all over the body, especially in the eyes. He then fell into a profound sleep, and remembered nothing more, but the man who brought him to the hospital, said, that he could not open his mouth, and had severe twitchings in the eyes and the muscles of the arms. On admission he was quite sensible, but complained of giddiness and great lassitude. Temperature normal, pulse 76, and respiration tranquil; pupils slightly dilated and responding to light. Upon the action of an emetic, the vomited matter did not smell of camphor, but during the day his breath did. There were subsequently headache, drowsiness, and some difficulty in micturition and pain in the loins. He was discharged well the next day."

Blyth describes the symptoms thus: It acts energetically on the brain and nervous system, especially if it is given in strong alcoholic solution. From seven to forty drops of Rubini's homœopathic camphor, taken for colds, sore-throats, &c., have produced coma, foaming at the mouth, convulsions and partial paralysis. The smallest dose known to have produced violent symptoms in an adult, is twenty grains; the largest dose known to have been recovered from, is 160 grains. Symptoms.

The bodies of animals and persons dying from poisoning by camphor, smell strongly of the substance. The mucous membrane of the stomach has been found inflamed, but there seems to be no characteristic lesion.

Antidote.—The stomach pump or emetics, hypodermic injections of brandy, inhalations of ether, the alternate hot and cold douche, warmth to the extremities by hot blankets, &c., (Blyth). Antidote.

Alcohol, as a criminal means of poisoning, calls for no comment, and the discussion of such cases may be left to the medical authorities. Alcohol.

Ether, chloroform and *chloral* also occur most rarely in criminal practice. When death happens, it is generally whilst the patient is undergoing an operation. Cases of chloral-poisoning are frequent in Europe from over-doses, by those who habitually take it; but cases of this kind are rare in this country. Ether, chloroform and chloral.

Carbolic acid.—Although poisoning by this acid is exceedingly common in England, owing to its rapidly increasing use, cases are rare in this country. Blyth says, that of all powerful poisons, it is the most accessible, and the most recklessly distributed. The acid was only discovered in 1834, and was first used by Dr. Lister about 1863. It only became generally known much later, but at present it occupies the sixth place in fatality in all poisons in England. Since 1868, Falck has collected no less than eighty-seven cases of poisoning from carbolic acid; in eighty-five of which, the poisoning was by the liquid acid. Seven of these cases were suicidal, and of these, five died; thirty- Carbolic acid.

nine were poisoned through the medicinal use of carbolic acid; twenty-seven by the antiseptic treatment of wounds by carbolic acid-dressings, and of these, eight terminated fatally; in eight cases symptoms of poisoning followed the rubbing or painting of the acid on the skin for the cure of scabies, favus or psoriasis, and six of these patients died. In four cases, carbolic acid enemata, administered for the purpose of dislodging ascarides, gave rise to symptoms of poisoning, and in one case death followed. I can find no recorded case of homicidal poisoning with carbolic acid, though when we find that no less than ten persons took carbolic acid in mistake for various alcoholic drinks, such as schnapps, brandy, rum, or beer,—nine of whom died, and that seventeen others took the acid simply by mistake, of whom thirteen died,—it seems strange, that as yet the poison has found no place in criminal cases.*

Symptoms.

Symptoms.—If swallowed in solution, or in the form of an undiluted liquid, the patient experiences a hot burning sensation, extending from the mouth to the stomach. This feeling is experienced during the act of swallowing, and the lining membrane of the mouth is whitened and hardened. Carbolic acid is rapidly absorbed, and in the course of a few minutes the system may be profoundly affected. In two instances, the rapidity of action was comparable to that of Prussic acid. Nervous symptoms are those most strikingly manifested, such as delirium, giddiness, and profound insensibility. Nausea and vomiting were present in not more than one-fifth of the observed cases. These symptoms may, however, be severe and uncontrollable. There is extreme feebleness of the pulse, and dry harsh skin, with lividity of the surface. The urine is often of an olive-green, or even black hue; but this symptom is more common in sub-acute, than in acute and rapidly fatal cases. The pupils are generally minutely contracted. Convulsions and trismus are not infrequently observed (Taylor).

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* Whilst this book has been passing through the press, a circular was sent to all dispensaries and hospitals, asking whether any cases of poisoning, by carbolic acid, had occurred during the last five years. Answers were received from more than sixty practitioners, but in only one case was it stated, that symptoms of poisoning had occurred after a carbolic acid-dressing to a wound. The case recovered. It seems probable, that accidental cases may have occurred, which have not been detected, since the only case mentioned appears to have been noticed by accident.

Fatal dose.

Fatal dose.—This is unknown. A few grains might prove fatal, and six or seven drops have produced serious results (Taylor). Falck, quoted by Blyth, has put the minimum fatal dose for a man at 231·5 grains. The largest dose, from which a person appears to have recovered, is that given in a case recorded by Davidson, in which over 2,310 grains (150 grammes) had been taken.

A case is recorded in the *Lancet* of May 19, 1883, in which a practitioner in Calcutta, injected into the bowels of a boy, aged five, an enema of diluted carbolic acid, which, according to his own statement, was one part in sixty, and the whole quantity represented 144 grains of the acid. The child became insensible a few minutes after the operation, and died within four hours. The body smelt strongly of carbolic acid.

Antidote.

Antidote.—Stomach pump, or, if there is great destruction of the mucous membrane, excite vomiting by injecting, subcutaneously, from five to six drops of the apomorphine solution; or give an emetic of zinc sulphate, ipecacuanha, or mustard. Wash out the stomach with a weak alkaline solution of soda; albumen may also be given, and such stimulants, as brandy and water, chloric ether, and aromatic spirits of ammonia. It is important to apply warmth to the extremities. Inject, sub-cutaneously, two to three drops of the atropine hypodermic solution.

Prussic acid.

Prussic acid (hydrocyanic acid).—This poison, though rare in this country, occupies the second place among poisons in order of frequency in England, and accounts for about forty deaths annually. Out of a thousand deaths from poisons of all kinds, 289 males and 67 females are likely to die from Prussic acid, or cyanide of potash (Blyth).

These poisons are rarely used for the purpose of murder, owing to the probability of detection from the rapid death and the certainty of detection. Out of 793 poisoning cases of a criminal character in France, only four were by the cyanides. The leading English cases are those of *John*

Tawell (Slough Case, 1850); *George Ball* (Lewis Case, 1860); and *Peter Walker* (Egglesham Case, 1857). The first of these cases was a most extraordinary one. The murderer had been as a young man convicted of forging a bill for £1,000, and had been sentenced to transportation for life. After a short time, owing to exemplary conduct, he obtained partial exemption from discipline, and became the principal druggist in Sydney. After many years he went home with a fortune, and was highly respected as a religious and charitable man. The woman he killed, however, had been his mistress, and he killed her because she threatened to disclose their intimacy after his marriage. He visited the woman in disguise, and administered the Prussic acid in some porter. Death was almost instantaneous, but in the meantime the prisoner got out of the house and went off to London. The telegraph had, however, just been invented, and he was traced. He was convicted, and, before his execution, made a full confession to the chaplain. This statement, however, the chaplain refused to give up—it was in writing,—on the ground that it had been made under the seal of confession (*Trials for Murder by Poisoning; Lathom Browne*). Case of Tawell.

The only case of Prussic acid poisoning to be found in the records of the chemical examiner, Madras, during the past few years, occurred at Punamali, in November 1884. A man was arrested for the supposed murder, but he was acquitted. The case was possibly suicidal. In this instance, a quantity of Prussic acid, equivalent to thirty-six minims of ordinary medicinal acid, was recovered from the stomach and contents, and other viscera forwarded for examination.

Fatal dose. *Fatal dose.*—Smallest recorded, twenty grains of Scheele's acid, fatal in twenty minutes. Largest dose with recovery, one drachm (sixty grains) of Scheele's acid. Average fatal dose, 2 per cent. acid thirty minims (*Ibid*; C. C. Stewart).

Antidotes. *Antidotes* are generally useless, since death is so sudden, a large quantity killing in from two to five minutes, though insensibility may occur in a few seconds. A moderately dilute solution of potash, lime, or washing soda, along with a little ferrous sulphate, would render harmless so much of the poison as was still in the stomach unabsorbed. Ammonia and chlorine water have also been used.

There are no characteristic *post mortem* appearances, which, on the whole, resemble those of asphyxia. The odour, however, should be a guide—an odour of almonds,—and the organs should at once be shut up in stoppered bottles, and sent for analysis (*Ibid*).

Detection is rarely possible after more than twenty-four hours, according to Allen; but Caspar detected eighteen millegrammes eight days after death; Sokoloff sixty days (in a hound); and Reichardt two months after death (*Ibid*). It is generally supposed that death from Prussic acid is instantaneous, but this belief is not supported by facts. Even in strong doses, at least ten seconds intervene between death. Blyth says, according to his own experiments, he has found that, in ten seconds, he could drink a liquid from a bottle, cork the bottle, get into bed, and arrange the bed clothes in a suitable manner; he could also throw the bottle away, or out of the window. This is a point which might become of great importance in a trial for poisoning by Prussic acid, where death is supposed to occur so rapidly. *Taylor* records a case, in which a woman drank a fatal dose of essence of almonds (essence of almonds contain Prussic acid); she went to a well in the yard, drew water, and drank a considerable quantity. She then ascended two flights of stairs, fell on her bed, and died in half an hour.

CHAPTER V.

VEGETABLE POISONS.

General use of, and difficulty of, detection.

WITH the exception of arsenic, the poisons most generally in use in this country are derived from the vegetable kingdom, and there can be no doubt that there are a number of poisons used, with the properties of which we are only imperfectly acquainted, or of which we are entirely ignorant. Several of these poisons leave no trace whatsoever. This is proved by the number of cases alluded to by the chemical examiner, in which no poison could be detected, although there could be no doubt that poison had been administered. For instance, in Vizagapatam, eleven persons were attacked with drowsiness and delirium, with dilated pupils and œdematous eyelids, shortly after eating some cakes.* Five of these persons died, but no trace of poison could be detected in the viscera. Generally speaking, it may be said, that, with the exception of arsenic, mineral poisons are rarely used in this country, probably owing to the facility of detection. Arsenic is probably so common, because its effects so strongly resemble those of cholera, and there are good grounds for supposing that advantage is often taken of an epidemic of cholera, to remove persons by means of arsenic-poisoning. Detection at such times is rendered more difficult, owing to the haste with which the bodies of persons, who have died from cholera, are burnt, together with their clothing, &c., and the evacuations disposed of.

As this portion of the work is not intended to be a treatise on poisons generally, only those will be alluded to which appear to be most commonly in use.

Aconite.

Aconite.—There were two cases of poisoning, by aconite, detected by the chemical examiner in 1883, against four in the previous year. In Bombay, during the last two years, no cases of poisoning, from aconite, are reported.

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* Chemical Examiner's Report, 1883.

Description.

Aconite is probably the oldest known poison in India, and its very name, *Bish* or *Vish*, is the original Sanscrit name for poison generally. Chevers gives a variety of names by which it is known, such as Bish, Bikh, Meetha Theelia, Meether Zuher, Ati Suigia Bish, Suigia Jur, Suigia Khar, Beechnak, Batsnab-bide (Bengalee), Mahoor (Hindi), Ativassa (Telugu), Nabi (Tamil). It is, however, very probable that many of these names refer to different species of the same plant. Aconite is also often used in conjunction with datura. The European plant is known as Aconitum Napellus, or Monkshood; it belongs to the Natural Order Ramunculaceæ, or Crowfoots. It is also known as Wolfsbane, or Blue rocket. The Indian species is known as the *Aconitum ferox*; and possesses far more poisonous properties than the European plant. Guy says that "there is reason to believe that *aconitia*, the active principle of the plant, is the most deadly poison in existence. In the "Trials for Murder by Poisoning," Mr. Stewart says, "that pure aconitia is perhaps the most deadly poison with which we are at present acquainted, and all the preparations of aconite are excessively dangerous." The use of this poison has been prevalent from the very earliest ages, not only for internal administration, but also as a poison for arrows, &c.

Difficulty of detection.

Its use appears now to be on the decrease, perhaps because the poison can now be more easily detected than formerly. Very great care, however, must be taken that the alkaloid discovered is not confounded with cadaveric alkaloids. This was made a great point in the defence of Dr. Lamson, which is the most recent case of aconite-poisoning. Mr. Montagu Williams, in his speech for the defence, laid great stress on the admitted inability of the scientific witnesses to rely on any other test than that of taste. "Scientifically," he said, "it was a leap in the dark, and they had to traverse a region of science up to the present moment unexplored. Who knows about aconite? and echo answers, who? What was it? The root of monkshood. Aconite was one form, and aconitia was the active principle of that form; and up to the present moment, with the exception of one reported case, there was not a single authority on the subject." In Dr. Lamson's case, the medical witnesses could only say that they thought death had been caused by a vegetable alkaloid, and considered that it must be aconite. Their opinion, however, was formed, not from personal experience of aconite-poisonings, but from what they had read of the poison, and the symptoms exhibited by the deceased. From the contents of the stomach a vegetable alkaloid was extracted, and this extract gave the taste of aconite, which, Dr. Stephenson said, was different from some eighty alkaloids which he had tasted; the same extract, injected into the back of a mouse, killed the animal in twenty-two minutes. Therefore Dr. Stephenson said, judging from the symptoms, the taste, and the effect upon the mouse, that he considered the alkaloid must have been aconite. So deadly is this poison, that one-thirteenth grain of aconitia is a fatal dose, and enough of alkaloid was discovered in the stomach of the deceased to kill two persons.

Unrecognizable poisons.

It seems remarkable, that, about so deadly a poison, and one which has been so long in use, there should be no chemical tests for its discovery, except as an alkaloid.*

The plant.

The plant itself is thus described by Guy. "It is a beautiful plant, from two to six feet in height, with dark-green leaves, of very characteristic form, and a terminal spike of rich blue flowers. It grows in hilly ground, and is often cultivated as a garden flower. All parts of the plant are poisonous, but the root is the most active." The root is a tuber, and has frequently been eaten in mistake for horse radish, but whereas horse radish is fibrous and stringy, when broken or divided, the aconite root is friable and succulent.

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* *Unidentified organic poisons* were detected in eight cases, and, as desired, the more important details of each of these cases will be given. But before adverting to each case in turn, it seems advisable to note that the evidence of the presence of an unidentifiable organic poison is necessarily physiological. By chemical processes an unknown poison may be extracted in a comparatively pure condition from a large bulk of organic matters, and its detection therefore greatly aided, but so long as the substance cannot be identified, its poisonous character cannot be established by chemical tests.—(*Extract from Dr. Rogers' Report for* 1883.)

Chevers describes the root, which is used in this country, as "being brittle, and breaking with a resinous fracture. It is readily reduced to a coarse powder, and in this state is destitute of smell, slightly bitter to the taste, the tongue being benumbed wherever touched on. The roots are sold in every bazaar in India, and may be purchased in large quantities for about two rupees per pound."*

Blyth says: "I have collected, from European medical literature of the last ten years, eighty-seven cases of poisoning, by aconite, in some form or other. These comprise only two cases of murder, seven of suicide, and seventy-seven, which were more or less accidental." The symptoms are perhaps best described by Chevers (see Illlustrative Cases). A man, by accident, chewed an aconite root. Immediately after chewing it, he felt a sweetish taste, followed immediately by tingling of the lips and tongue, numbness of the face, and severe vomiting. On admission to the hospital, he was extremely restless, tossing his limbs about in all directions, and changing his position. He complained of a burning sensation in his stomach, and a tingling and numbness in every part of the body, except in the legs. The tingling was especially marked in the face and tongue, so much so, that he was constantly moving the latter to and fro, in order to scratch it against his teeth. Retching and vomiting occurred almost incessantly, and he constantly placed his hand over the cardiac region. His face was anxious, the eyes suffused, the lips pale and exsanguine, the eyelids swollen, moderately dilated, and insensible to the stimulus of light; the respiration was laboured, sixty-four to a minute; the pulse sixty-six, small and feeble. There was inability to walk from loss of muscular power, but the man was perfectly conscious. The stomach pump was used, and albumen and milk administered. Three and three-quarters of an hour after admission, the symptoms increased in severity. The tongue was red and swollen, the pulse intermittent, feeble and slower. The

Symptoms.

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* Aconitum hetorophyllum is non-poisonous. The root is different in appearance from the poisonous variety, and is used as a tonic.

tingling and numbness had extended to the legs. On examining the condition of the external sensibility, with a pair of scissors, it was found, that on fully separating the blades and arms, and bringing the points in contact with the skin over the arms and fore-arms, he felt them as one, although they were four inches apart. He began to improve about the ninth hour, and gradually recovered, although he suffered for one or two days from slight diarrhœa.

Medicinal use.

Aconite is used medicinally for neuralgia, and in this country, by natives, for leprosy, fever, cholera and rheumatism. Amongst the hill tribes, especially in Burmah and Assam, it is used for poisoning the heads of arrows, and it is probably this same poison, which is used by the Andamanese for a similar purpose; so deadly is the poison, that the slightest scratch from a poisoned weapon, proves fatal. It is used by the Mishmees, a tribe of Assam, and, it is said, that an elephant struck in the shoulder by a poisoned arrow discharged from a gun, dies in a few minutes; but if struck in the hind-quarters, he lives till next day.

Antidote.

The only antidotes seem to be, the use of the stomach pump and emetics, and after the stomach has been emptied, give *atropine*, by hypodermic injection, or by mouth. Apply a mustard plaster to the pericardium, and aid vomiting by plenty of water, to which a little alcohol may be added.

General remarks.

The Japanese are said to use a species of aconite root, which they call *Küsa-usü*, and it seems certain that there are very many kinds of the plant, which vary in their poisonous characters. In conversation with the late Dr. Rogers, I was given to understand that he had discovered a process, by which the detection of aconite could be greatly facilitated, if not made certain, and he promised that the paper he would give me on the subject, would throw considerable new light upon this important point. If, however, that is the case, any discovery he made has died with him, for he has left no notes on the subject. *Blyth* says: "In our present state of knowledge, the identification of the active principle of the aconites must rest entirely upon physiolgical evidence, for though the substance may be isolated and identified as an alkaloid, yet the chemical tests (such as, that it strikes a red colour with sugar and sulphuric acid, and a violet when stirred up with some drops of syrupy phosphoric acid, and heated for fifteen minutes on the water-bath) are not to be relied upon." Munro killed a sparrow with one grain in less than an hour, but the extract, although when mixed with some crumbs of bread, killed a tomtit in two or three hours, did not respond either to the taste or to any chemical test (*Ibid*).

ILLUSTRATIVE CASES.

(Part IV, Chapter V.)

LXXXIV.—*Dr. Lamson's Case.*

Dr. Lamson was charged with the murder of his brother-in-law, Percy Malcolm John, in 1882. Deceased was a weakly lad, of about eighteen, and was a cripple from spinal disease, being paralysed in his lower limbs. By his death, Lamson's wife would have inherited the sum of £1,500. In November 1880, Lamson purchased two grains of aconitia, and a few days afterwards went to the school, where the lad was placed, had an interview with his brother-in-law, and, in the presence of the head-master, gave the boy a capsule, which he filled then and there with some white powder, presumed to be sugar. Lamson only stayed altogether twenty minutes in the house, and directly after he saw the boy swallow the capsule, he left. Within fifteen minutes the boy became unwell, saying that he felt as if he had an attack of heart-burn, and then that he felt the same as when his brother-in-law had, on a former occasion, given him a quinine pill. Violent vomiting soon set in, and he complained of pains in his stomach, a sense of constriction in the throat, and of being unable to swallow. He was very restless, so much so, that he had to be restrained by force from injuring himself. There was delirium a few minutes before death, which took place about three hours and three-quarters after swallowing the fatal dose. The *post mortem* appearances essentially consisted of redness of the greater curvature of the stomach, and the posterior portion of the same organ. In one part there was a little pit, as if a blister had broken; the rest of the viscera were congested, and the brain was also slightly congested. Drs. Stephenson and Duprè conducted the chemical examination. The process need not be here described, but the result was, an extract from the vomit, the stomach, liver, spleen and urine, of an alkaloid, which, on being tasted, caused numbness to the tongue, and which, on being injected into the skin of a mouse, caused death in two minutes. This alkaloid was held to be aconitine. Lamson came over from France, and gave himself up for trial. In his defence, it was urged, that there was not sufficient evidence to prove that the alkaloid was aconitine, and that it might have been cadaveric; that the experiment on a mouse was not sufficient, since mice are so timid, that they sometimes die from an injection of pure water. He was convicted, and an attempt was afterwards made to get him off, on the ground of insanity. It was urged, that he had long been very eccentric, was in the habit of using enormous doses of morphia and opium as hypodermic injections, and had for a long time had a morbid habit of prescribing dangerously large doses of aconite for almost every disease. The Home Secretary refused to interfere, and he was executed.

LXXXV.—(*Quoted by Chevers.*)

In 1834, *seventy* men, who had been drinking the intoxicating liquor, prepared from the mowah flower (*Bassia latifolia*), at a native spirit shop in Benares, were attacked with symptoms of poisoning. Forty-three were brought to hospital, and eighteen died outside. There was a sense of constriction and burning at the upper part of the œsophagus, twisting of the tongue, in some instances protrusion; cramps in the legs and arms; pulse small and weak, and in none exceeding sixty-five; in some it was imperceptible. The treatment was, removing the poison from the stomach, and administering ammonia. All who were treated recovered by next day. One of the servants of the shop, who had disappeared, subsequently confessed that he had put *singhera* into the pots in which the mowah flower had been steeped.

LXXXVI.—(*Ditto.*)

In 1854, one Anund Chunder Roy, having incurred the censure of his family, by his dissipated and extravagant life, conceived the idea of murdering them all. For this purpose he purchased about an ounce of the aconite root. He was seen pounding some of the root on a brick, and was proved to have deposited the powder in a utensil, containing a vegetable broth, at his brother's house. The brother and three women partook of the broth. The man ate first, and probably got the largest share of the broth and the poison. He was taken ill almost immediately, complaining of a burning sensation in his throat and stomach, vomited once, and died during the night. The three women were seized with the same symptoms, and soon fell into a state of insensibility, but recovered. The prisoner at first ascribed these events to cholera. A boy, son of deceased, swore that he had seen the prisoner put something in the cooking vessel. The civil surgeon examined the body, and deposed that "he was unable to account for the death on any supposition other than that the deceased had swallowed some vegetable poison, as, for instance, aconite." The prisoner was sentenced to death.

Several other instances could be given, but the foregoing seem sufficiently to illustrate the action of the poison, and the difficulty of its detection.

CHAPTER VI.

VEGETABLE POISONS—STRYCHNIA.

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Description.

Strychnia is ascertained to be the active poisonous principle of five plants, all natives of hot climates: the *Strychnos nux vomica; S. Ignatia; S. tienté; S. toxifera,* and *S. Colubrina.* The former is the species found in India, where it grows as a tree, and is known as Yetti maram (Tamil), Musadi chettu (Telugu), Koochila (Hindustanee and Bengalee), and Veeshamoostie and Kulaka (Sanscrit). The first is easily obtainable in almost every bazaar. The poisonous properties are contained in the seed, and also in the bark. The seeds, three to five in number, are enclosed in a fruit, resembling in appearance a small orange, but very variable in size. The seeds are disc-shaped, concavo-convex, about an inch in diameter, and a quarter of an inch thick, and of ash grey colour; when cut in two they show a circular central cavity and a heart-shaped embryo.

Characteristics.

Strychnine is so powerfully bitter, that one part dissolved in 70,000 of water, is distinctly perceptible. It is said to be one of the easiest alkaloids to detect, and $\frac{1}{500,000}$ of a grain is discoverable by the colour tests. Putrefaction does not change it, and it has been discovered in the tissues after *eleven* years, and yet there are few analysts who have not, on some occasion, failed to find it. Dr. Taylor failed to find it in the body of an animal which had been killed by administering five grains, hypodermically. A very small quantity, about one grain, is sufficient to destroy life. The reason why failure so often occurs in the detection of the alkaloid, is, that even of the one grain sufficient to kill, only a very small portion is absorbed; the rest is eliminated by vomiting (when it occurs), and by the urine and fæces; the absorbed portion is diffused with great rapidity through a

Difficulty of detection.

large mass of blood and tissue; the result is, that we are looking for one part of the poison in about a million times its weight (*Stewart's Trials for Murder by Poisoning*). In the celebrated *Palmer* case, Dr. Taylor was unable to find any trace of strychnine in the stomach and viscera, and yet Palmer was convicted of having caused Cook's death, by administering strychnine. This failure of detection was made a strong point in the defence, and Dr. Herepath, another celebrated analysist, swore that if there was $\frac{1}{5,000}$th part of a grain in the body, it should have been detected. If even so small a quantity were there, this no doubt is true; but if the poison has been absorbed, or has been passed out by the evacuations, it is no longer there, although death may have been caused by it. There also seems reason to believe, that, in the act of absorption, the alkaloid itself undergoes a change. Again, there may be no strychnia in the stomach, but it may be found in the rest of the organs, blood, muscles, &c., so that, if necessary, the whole of the body should be tested, which, in this country, is practically impossible. Strychnine is used principally as a vermin-killer in the preparations known as Battle's, Butler's, Gibson's, Miller's Rat-powder, Marsden's and Barter's vermin-killer. Stewart says, that in Keating's Insect-powder, he has found *neither* strychnine nor arsenic. It is also used in the British and Continental pharmacopœia.

Statistics.

In Madras and Bombay it accounts for the following deaths during 1882 and 1883 (as far as cases have come before the chemical examiners): Madras, 6; Bombay, 5. In England, during the five years, 1875—80, out of 1,581 total deaths from poison, strychnine and nux vomica account for seventy-nine, or an average of nearly sixteen a year. This is about five times as much as the proportion of deaths, from this poison, to the population in this Presidency (Madras). As regards the fatal dose, there appears to be a variety of opinions: Blyth estimates it at $\frac{7}{10}$ths of a grain; Taylor at from ·5 to 2 grains, and Guy puts the minmum at ·25 grains. Large doses of strychnine may be recovered from, if the medical treatment is prompt. In a case related by Schwanenstein, a suicidal chemist took from 7·4 to 9·25 grains of strychnine nitrate, and half an hour afterwards 9·25 grains of morphine acetate. Two and a half hours afterwards convulsions set in, and when the physician, who had been called, came, he was in general tetanus. The treatment consisted of emetics, and afterwards tannin and codeine; on the third day recovery was complete.

Symptoms.

The following are the symptoms, as described by Blyth: The commencement of the symptoms may be extremely rapid, the rapidity being mainly dependent on the form of the poison, and the manner of application. When nux vomica has been taken, or strychnine given in the form of a pill, the symptoms generally commence in about half an hour. At first there is, in a few cases, a feeling of uneasiness and heightened sensibility to external stimuli, a strange feeling in the muscles of the jaw, and a catching of the respiration; but generally the onset of the symptoms is as sudden as epilepsy, and previous to their appearance the person may be pursuing his ordinary vocation, when, without preliminary warning, there is a shuddering of the whole frame, and a convulsive seizure. The convulsions take the form of violent general tetanus; the limbs are stretched out involuntarily, the hands are clenched, the soles of the feet incurved, and in the height of the paroxysm, the back may be arched and rigid as a board, the sufferer resting on the head and heels, and the abdomen tense. In the grasp of the thoracic muscles, the walls of the chest are set immovable, and, from the impending suffocation, the face becomes congested, the eyes prominent and staring. The muscles of the lower jaw—in the disease tetanus, *the first to be affected*—are in strychnos tetanus, as a rule, *the last;* a distinction, if it were more constant, of great value. The convulsions and remissions recur until death or recovery, and, as a rule, within two hours from the commencement of the symptoms, the case, in some way or other, terminates. In a few cases the third spasm has passed into death, in others there have been a great number. The duration of a spasm is also very different, and varies from thirty seconds to five, or even eight minutes; the interval between lasting from forty-five seconds to one, or even one and a half hours.

Post mortem appearances.

Post mortem appearances.—In deaths from strychnine-poisoning, there are very few characteristic *post mortem* appearances. Stiffness of the body is the chief characteristic, but this is very variable. In some cases the *rigor mortis* lasts no longer than in ordinary deaths, but sometimes, as in the *Palmer* case, the body remains stiff for two months after death. Where convulsions have been violent, Blyth says that he has found "considerable hæmorrhage in the trachea." Death may occur from asphyxia, in which case, the ordinary signs of asphyxia will be found in the lungs, &c. The heart generally has its right side gorged with bood, but in a few cases, it is empty and contracted.

Treatment.

Treatment should be immediate, and the first thing to be done, is to remove the poison by emetics, or the stomach pump. Chloral should be given in order to lessen the convulsions, or chloroform, or, if neither is at hand, full doses of the nearest narcotic available. If the convulsions threaten to produce suffocation, tracheotomy may have to be performed, in order to produce artificial respiration.

Strychnine-eaters.

In this country nux vomica is often eaten, instead of opium, or bhang, and Chevers cites rather an important case of a person who was a great sufferer from rheumatism, and who took every day enough of *nux vomica* in water to make the body rigid. When the body became rigid, he remained quite sensible, but lost all feeling of pain. Another case is recorded of a young man who died (in 1849) four days after admission to the jail. He had been in the habit of eating some sweetmeats, with which nux vomica was mixed, and, owing to the cessation of this food, a kind of epilepsy set in, from which he died. It appears that wrestlers are in the habit of taking a daily dose, in order to increase their strength, and in the same way, as with opium, if this dose is suddenly stopped, morbid symptoms are likely to set in. In some parts of Bengal it is also usual to take nux vomica as an aphrodisiac. It is also alleged, that it is sometimes mixed with arrack, in order to make the spirit more intoxicating.

Strychnos tetanus, or disease tetanus.

In a trial for murder, by strychnine, the question may be raised, whether the tetanus and convulsions were not caused by disease, as in the case of *Palmer,* and it is therefore of the utmost inportance that the symptoms should be carefully observed, especially since it is possible, as in *Palmer's* case, that no trace of the poison may be found in the body. The police and prosecuting vakeel should therefore be particular in eliciting all the symptoms, and the defence will be equally careful in endeavouring to ascertain whether these symptoms could not have been caused by injury or disease.

Brucia.

Brucia is another poisonous alkaloid found in the seed and bark of the nux vomica and S. Ignatius' bean. It has exactly the same poisonous properties as strychnia, but in a less degree, variously estimated at a sixth or a twelfth.

ILLUSTRATIVE CASES.

(Part IV, Chapter VI.)

LXXXVII.—(*Quoted by Chevers.*)

In 1853, a man in Goruckpore drank off a bottle of common bazaar spirit. He at once remarked: Something is wrong, as this sharab is very bitter. Soon afterwards spasm came on, and frightful convulsious; there was perfect opisthotonos of the body. Intellect was entire throughout. On the abatement of the convulsions, coma (fainting) set in, and he died in three-quarters of an hour. In the stomach a trace of strychnia was found, and it was discovered that the natives in the bazaar were in the habit of mixing the powdered bark of the nux vomica when distilling the spirit.

LXXXVIII.—(*Ibid.*)

During the autumn of 1840, a European sailor, who was being treated in the Calcutta hospital, was given some of the *viscum monoicum* or *kuchla molung*, (a powder made from a parasite, which grows on the *nux vomica* tree), in mistake for kubeb powder. He swallowed the contents of one of the packets, mixed with a little water, and immediately fell back screaming, "I am poisoned." From that moment, until the time of his death, four hours afterwards, he never uttered another word; every attempt at speech being frustrated by the most violent fits of convulsions. The paroxysms recurred about two or three times every minute, and each time lasted about ten or eighteen seconds, and during the time six bearers were unable to keep him in the bed. The stomach pump could not be used, as every touch on the body accelerated the return of the convulsions, and put the patient to the most agonizing tortures. The sitting of a fly on the body had the same effect. An attempt was made to administer anodynes, but with no effect, and he died at 1 P.M., after suffering the most excruciating pain for four hours.

LXXXIX.—(*Ibid.*)

In the trial of Palmer there was a great enquiry for the case of a person who had died in the first spasm of the disease tetanus. No properly authenticated case was found, but Chevers gives one, which occurred in the experience of Dr. Webb, whilst in charge of La Martinière school: "An apparently healthy boy, one of the pupils, was seated on the bed, having a small sore on his foot dressed by the native doctor. Having applied the dressing, the doctor was leaving. He walked straight to the door; but as he was passing out, he heard a noise from the bed. Turning, he saw the boy supported on his head and his heels, the body being arched up in opisthotonic spasm. He ran to the bed, the body sank, and death was immediate." It is to be regretted that more information is not available regarding the nature of the sore, which led to this remarkable case, which seems to be unique of its kind. Could these symptoms have been produced by strychnine having been mixed in the dressing by mistake?

XC.—(*Quoted by Blyth.*)

However striking and well-defined the picture of strychnine tetanus may be, mistakes in diagnosis are rather frequent, especially when a medical man is hastily summoned, has never seen a case of similar poisoning, and has no suspicion of the possible nature of the seizure. In a painful case in which the author (Blyth) was engaged, a young woman either took, or was given, (for the mystery was never cleared up fully), a fatal dose of strychnine, and though the symptoms were well marked, the medical attendant was so possessed with the view, that the case was due to hysteria, that even after making the *post mortem* examination, and finding no adequate lesion, he theorized as to the possibility of some fatal hysteric spasm of the glottis, while there was ample chemical evidence of strychnine, and a weighable quantity of the alkaloid was actually separated from the contents of the stomach.

XCI.—*Recovery from large doses.*

Taylor says: "There are at least three instances on record, in which persons have recovered after taking one grain. A case of recovery from two to three grains is recorded (*Lancet*, 1861, II, p. 169). A girl recovered in six or seven hours from a dose of four grains of strychnine (*Ibid*, 1863, I, p. 134). There is one instance reported, in which a person is said to have recovered from a dose of *seven* grains of strychnine (*Med. Gaz.*, Vol. 41, p. 305)." In this case, however, the poison was probably mixed with some other substance, and if, as in the case given in the text, it had been mixed with a narcotic (the case of the *Suicidal Chemist*), the one poison possibly counteracted the effects of the other.

CHAPTER VII.

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VEGETABLE POISONS—DATURA.

Atropine, or daturine, is the alkaloid which is found equally in all parts of the plant *Atropa belladonna*, or deadly night-shade, and in all species of datura. The species most common in India, and especially in this Presidency, is the datura alba, or white datura, which is to be found growing on manure heaps near every village. A purple-coloured variety is also common, and a yellow species (*D. atrox*) is found on the Western coast. The leaves, stalk, ripe fruit, seed, unripe fruit, and root, all contain the poison. The datura seed, which appears to be chiefly used, is not unlike the capsicum seed, for which it has often been taken by mistake. Description of.

Belladonna and stramonium are both used medicinally in liniments and tinctures, and the preparations contain a certain quantity of atropine.

As a poison, datura has been used in India from the very earliest times. Formerly its use was very wide-spread, but of late years the reported cases, that is those which come before the chemical examiners, show a considerable falling off. In Madras, in 1882-83, in only one case was datura detected in viscera. In 1883 there were two cases only, neither of which were fatal. In one case seven persons were affected, and in the other, two. In Bombay four cases occurred during 1882-83, and five during 1883. In the last-mentioned cases twenty-eight persons were affected, but only four died. All these cases appear to have been connected with robberies. History of, in India. Statistics.

The English death statistics for five years ending 1880, record thirty-seven deaths (twenty-three males and fourteen females) from atropine, of which eight were suicidal, and the rest accidental; the accidents were chiefly from mistakes in pharmacy.

Present use of.

Dr. Chevers has given a very full and exhaustive history of datura-poisoning in this country, and, for the purposes of this book, it does not seem necessary to do more than allude to it. Not only is the poison used by the criminal classes for the purposes of intoxicating their victims before robbing them, but it has frequently been used for purposes of domestic revenge. This poison probably formed the ingredients of the celebrated *Poust*, which was frequently administered to royal princes, who, by rebellion or relationship, had rendered themselves obnoxious to the throne. Chevers says, that "there appears to be no drug known in the present day, which represents, in its effects, so close an approach to the system of slow poisoning, believed by many to have been practised in the middle ages, as does the datura."

Fatal dose.

It is impossible to state, with accuracy, the exact quantity which may cause death. One-eighth grain of atropine has been known to produce poisonous symptoms, and two grains death. Blyth says, that probably one grain would, if unchecked by remedies, act fatally, but very large doses have been recovered from when treatment has been prompt. In this country, the preparation generally used is the bruised seeds, or a decoction of the seeds or leaves.

Symptoms.

The symptoms are thus described by Blyth: When the seeds, or fruit of atropine holding plants, are eaten, there is a very appreciable period before the symptoms commence, and, as in the case of opium-poisoning, no very definite rule can be laid down, but usually the effects are experienced within half an hour. The first sensation is dryness of the mouth and throat; this continues increasing, and may rise to such a degree, that the swallowing of liquids is an impossibility. There is also a spasmodic contraction of the muscles of the throat. The mucous membrane is reddened, and the voice hoarse. The inability to swallow, and the changed voice, bear some resemblance to hydrophobia—a resemblance heightened by an inclination to bite, which seems to have been occasionally observed; the pupils are early dilated, and the dilatation may be marked and extreme; the vision is deranged, letters and figures appear double; the eye-balls are occasionally remarkably prominent, and generally congested; the skin is dry, even very small quantities of atropine arresting the cutaneous secretion. With the dryness of the skin, in a very large percentage of cases, a scarlet rash occurs over most of the body. The temperature of the body in large doses is raised, in small ones somewhat lowered. The pulse is increased, being always over 100, and mostly from 115 to 120, or even 150, in the minute. The breathing is at first slower, and then very rapid. Vomiting is not common. The nervous system is profoundly affected; in one case there were clonic spasms; in another, such muscular rigidity, that the patient could with difficulty be placed on a chair. The lower extremities are often partly paralysed, there is a want of co-ordination, the person reels like a drunken man, or there may be general jactitation. The disturbance of the brain function is very marked; in about 4 per cent. only of the recorded cases has there been no delirium, or very little. In the majority, delirium is present. In adults this generally takes a garrulous pleasing form, but every variety has been witnessed. Dr. H. Giraud describes the delirium thus: "He either vociferates loudly, or is garrulous, and talks incoherently; sometimes he is mirthful, and laughs wildly, or is sad and moans as if in great distress; generally he is observed to be very timid, and when most troublesome and unruly, can always be cowed by an angry word, frequently putting up his hands in a supplicating posture. When approached, he suddenly shrinks back as if apprehensive of being struck, and frequently he moves about as if to avoid spectra. But the most invariable accompaniment of the final stage of delirium, and frequently also that of *sopor*, is in the incessant picking at real or imaginary objects. At one time the patient seizes hold of parts of his clothes, or bedding, pulls at his fingers and toes, takes up dirt and stones from the ground, or snatches at imaginary objects in the air, on his body, or anything near him. Very frequently he amuses himself by drawing out imaginary threads from the ends of his fingers, and occasionally his antics are so varied and ridiculous, that I have seen his near relatives, although apprehensive of danger, unable to restrain their laughter." After this description of the symptoms, it is easy to understand in what horror the ancient *Poust* was held, and why, when one of the young princes who had rebelled against Aurungzebe, when brought into the emperor's presence, pleaded that he should rather be killed at once than made to drink *Poust.*

Chronic-poisoning.

Chronic poison, by atropine, has been very common in India, and in those cases where the object was to bring on imbecility, continuous doses were administered, and the same has been attempted by servants against their masters in recent times (see Illustrative Cases). There are few characteristic *post mortem* appearances in cases of poisoning from atropine, save in the fact that the pupils remain dilated. The brain is usually hyperæmic. The stomach and intestines may be somewhat irritated if the seeds, leaves, or other parts of the plant, have been eaten, but the irritation is not constant if the poisoning has been by pure atropine, and still less likely to be present if atropine has been administered sub-cutaneously.

Treatment.

Treatment.—The great majority of cases recover under treatment. Emetics and stomach pump should be used, and in England the favorite treatment is by pilocarpine, a fifth of a grain being injected from time to time. The traditional treatment in this country is by the application of cold water to the feet. Morphia may be cautiously used as an antidote.

General remarks.

There can be no doubt that a great many cases still occur, in which datura is used upon travellers for purposes of robbery, though such cases are now of far less frequency than formerly. For some years after the suppression of thuggee, which crime was mainly carried out by means of strangulation, robbing, by means of administering drugs, for some time considerably increased. It probably still prevails in the wilder and more inaccessible parts of the country, but is on the decrease, owing to the opening out of communications and the better organization of the police. Still it is only two or three months ago that there was a charge made, that such an offence had been committed on the railway between Madras and Bangalore, a complaint, by the way, which led to a charge against the police for torture, in order to extort evidence.

ILLUSTRATIVE CASES.

(Part IV, Chapter VII.)

XCII.—(*Quoted by Chevers.*)

In 1852, two men, Bhowany (the name is significant as being that of the goddess of the thugs) and Bhola, his nephew, were tried at Meerut, on the accusation of a man, who deposed that, when on his way to Lucknow, he met Bhowany at Umballah, who said he would travel in company with him. On their way, Bhowany took him to a Bunneah's shop, and purchased some attah and dhall. After cooking it, the complainant, at Bhowany's request, went for some water; on his return, he ate the food and became insensible. Bhola, who had lately joined them, was present. Bhowany then placed the man in a hut, they robbed him, and pretended to the police that their party consisted only of two. The police found the complainant insensible, and concealed in a corner of the hut. A bag of datura seed was found on Bhowany, and some concrete juice of the *Cannabis Indica.* The prisoners mutually accused each other. Sentence, fourteen years' imprisonment.

XCIII.—(*Ibid.*)

A prostitute, named Durbarun, who gained her livelihood by singing, was proceeding from Meerut to Allyghur, accompanied by her mother and six other persons. They were met on the way by one Koda Buksh, who appears to have had some acquaintance with the party at Meerut. He said that he was in want of service, and was engaged by the woman as cook to the party. On arriving at Coel, they put up in a *serai*, and the prisoner was given food to cook. This was eaten about nine in the evening. At midnight, the chowkedar of the *serai* observed some of the party rolling about the ground; he went up, and found them all, more or less affected by some intoxicating drug. The prisoner lay among them, feigning sleep, and some jewels, belonging to the prostitute, were found on his person. Four of the men were sent to the dispensary and recovered in three days. The others, who had eaten less, recovered after an emetic had been given. The prisoner confessed having got some datura from a neighbouring garden. Sentence, fourteen years' imprisonment.

XCIV.—(*Ibid.*)

In 1868, the *Police Gazette,* N.-W. P., published the confession of one Ramadheen, not quite twenty-one years of age, who had adopted datura-poisoning as a profession. He spoke of his victims without the slightest remorse, and looked upon them as shikar, or game. As far as he could remember, he had, during a year and a half, poisoned about twenty-seven persons, but as he spoke very vaguely of families and persons, not much reliance could be put upon his figures, more or less.

Altogether there can be no doubt, that the tradition of datura-poisoning, for the purposes of robbery, is still strongly implanted in the criminal classes. With poisons of every kind so easily accessible, with so many opportunities in a country which, in parts, is thinly populated and elsewhere densely over-crowded, which is everywhere liable to sudden outbreaks of violent epidemics, and in which, except in a few centres, there is no skilled medical attendance, it seems by no means improbable that a large number of deaths are annually ascribed to fevers, snake-bites, and accidents, which, in reality, are due to homicides by poison.

XCV.—(*Case by Dr. D. B. Smith.*)

This is a very peculiar case of a European gentleman residing at Mussoorie, who, in 1868, appears to have been poisoned by repeated doses of datura. For several days he was in a semi-intoxicated state, apparently quite out of his mind. The symptoms were all of datura-poisoning, though not at first recognized as such. He afterwards recovered. In this case the servants first expressed a suspicion that their master had been poisoned, and it is not explained who should have administered the poison, or for what reason.

XCVI.—Another case is recorded by Chevers, in which, in 1865, a gentleman employed in the railway, a Mr. Uppham, says that he saw, from a distance of ten paces, his servant pounding the datura fruit, which one of them had got from a tree close by his house, and squeezing the juice through a towel into his stew. He called for the stew, as if to partake of it, but after a little while told his khitmutgar that he was not hungry, and to keep the stew on the table for breakfast next morning, resolving to make it over to the railway doctor next day. That night he wrote a letter to the doctor, to be despatched the next day. Next morning, however, he called for *chota hazree*, partook of tea and hand-cakes, and then mounted his horse and rode to the doctor's. He was obliged to halt at a bungalow on the line, as his head felt affected. Mr. Augier, the occupant of the bungalow, took him in and called another person, but neither could make out what was the matter with Mr. Uppham, for he reeled to and fro like a drunken man, and yet was not drunk. They called in the doctor, but he was at a loss to discover the cause of indisposition; the patient was talking incoherently, going reeling about the room, and every now and then squeezing and twitching his coat-tail, and looking about the room as if to illustrate his meaning still further. After recovering from the stupor, next day, Mr. Uppham left for home, and returned shortly after with a fruit from the same datura tree; the doctor then of course had no doubt on his mind that datura had been administered to Mr. Uppham. Before the magistrate who committed the prisoners to the sessions, one confessed to having taken the fruit from the tree alluded to by Mr. Uppham, another confessed to its being pounded and made over to the khitmutgar, but he said that he did not give it to his master, but used it himself for ear-ache. Verdict not recorded.

CHAPTER VIII.

OPIUM AND OTHER VEGETABLE POISONS.

Opium contains a greater number of basic substances than any other plant known. The list reaches at present to eighteen or nineteen nitrogenised bases, and almost each year there have been some additions. Some of these alkaloids exist in very small proportions, and have been little studied. Morphine and narcotine alone are the toxico-logically important ones (Blyth).

Opium is a gummy mass, consisting of the juice of the incised unripe fruit of the *Papaver somniferum*, or poppy, hardened in the air.

Medicinal use.

Medicinally, opium is more largely used than any other poison, and there is no object in enumerating all the different preparations in which it is employed. Most of these bear opium in their titles, but some *patent medicines*, such as "Nurse's Drop," "Dalby's Carminative," "Chlorodyne," "Atkinson's Infant Preserver" and "Boerhave's Odontalgic Essence," "Godfrey's Cordial," "Black Drop," and "Nepenthe," contain the drug in large quantities without any such announcement.

Statistics.

In England, during the five years, 1876-80, 393 males and 250 females died from some form or other of opium-poisoning; two only out of the whole number were cases of murder, and in both the victims were infants. 22·4 per cent. of the female cases, and 30·5 of the males, were suicidal. During the five years, opium accounts for 40·7 per cent. of the total number of deaths from poisoning (1,581). This percentage is far larger than that of any other European country. A very large proportion of the deaths occur amongst infants from the use of "Soothing syrups," "Infants' preservers," &c. In India this kind of poisoning is also very frequent, more from carelessness than intention, in order to send children to sleep.

Usual dose.

For adults, the usual dose of opium in the solid state is from one-fourth to one grain, and never exceeds three grains, except in the case of habitual opium-eaters; for children, rarely more than one drop.

Fatal dose.

The smallest dose of solid opium known to have proved fatal to adults, was, according to Taylor, four grains of crude opium, and the smallest dose, according to the same authority, was two drachms of the tincture.

In Madras, during 1883, four cases came before the chemical examiner, in which opium was discovered in viscera or evacuations, and in 1882-83, seven cases. In Bombay there were seventeen cases in 1883, of which twelve (adults) appear to have been accidental or suicide, and three cases of children, apparently from over-dose. In 1882-83 there were only two cases, of which one was fatal. One of these cases appears to have been homicidal.

Symptoms.

Blyth gives three forms of poisoning:—

(1) The common form, as seen in about 99 per cent. of cases; (2) a very sudden form; (3) a very rare, entirely abnormal form, in which there is no coma, but convulsions. In the common form there are three stages: (1) excitement; (2) narcosis; (3) coma. The first stage occurs in about half an hour, and, during its prevalence, the action on the system is like that of alcohol: the ideas flow most rapidly, and, instead of sleepiness, the reverse is the case. It, however, insensibly, and more or less rapidly, passes into the next stage of heaviness and stupor. Then follows the sleepy stage; pulse and respiration is slower, often irritability of the skin and rash vomiting, if the poison has been swallowed, and constipation. In the last stage the patient sinks into complete insensibility.

The sudden form is that in which the individual sinks into a deep sleep almost immediately, *i.e.*, within five or ten minutes, and dies in a few hours.

Examples of the convulsive form are to be found only among opium-eaters, or persons under otherwise abnormal conditions.

External applications to wounds, and liniments or poultices, have produced fatal effects.

Antidotes.—Besides stimulating emetics and the use of the stomach pump, atropine may be used as a physiological antidote. It is best administered by hypodermic injection, and should be given in small quantities frequently repeated.

Post mortem appearances.

There appear to be no characteristic appearances after death, save hyperæmia of the brain and blood vessels of the membranes, with generally serous effusion into the ventricles. The external surface is either livid or pale. "The lungs are commonly hyperæmic, the bladder full of urine, still in not a few cases there is nothing abnormal, and in no single case could a pathologist, *from the appearance of the organs only, declare the cause of death with confidence*" (Blyth).

Among other vegetable poisons which may be identified by chemical or by physiological tests, are the following:—

Indian hemp (Cannabis Sativa, N. O. Urticaceæ), which is much used as an intoxicating drug in some parts of India. It causes excitement, delirium, sometimes loss of voice, dilated pupils, and sleep. Fatal effects are rare.

Plumbago (P. Rosea and Zeylanica, N. O. Plumbagineæ) and *Oleander* (Nerium odorum and Thevetia neriifolia, N. O. Apocyneæ), both of which are irritant poisons.

Andrachne Cadishaw or Lebedieropsis Orbicularis (Tam. Odwan, Nachutu), a euphorbiaceous shrub, which has recently been identified as the probable poison in some cases of irritant poisoning which occurred in the Madras Presidency.

In some cases, however, it should be remembered, that a vegetable poison may be extracted from viscera or suspected substances, and its poisonous nature may be determined by physiological methods, while its exact source cannot be identified by any known chemical tests.

CHAPTER IX.

ANIMAL POISONS.

THE following are the subjects belonging to the animal kingdom, from which poisons are derived :—

Amphibia.

(1) Amphibia, such as salamanders and toads. From the former, the poison called salamandrine, is obtained from the juice of the skin glands of the *Salamandra maculosa,* and the water salamander (*Triton cristatus*) ; when injected into rabbits, dogs and frogs, it produces paralysis, tetanus, and death. The secretion of the skins of toads produces an alkaloid named *Phrynine,* which is poisonous to all animals experimented on, except toads. Administered to frogs, it causes rapid paralysis of the heart, and the breathing soon afterwards ceases. The muscles become early rigid.

Scorpions.

(2) *Scorpions.*—The poison from these insects requires no notice here, as it is not used for criminal purposes.

Poisonous fish.

(3) *Poisonous fish.*—With reference to this subject, we may allude to the recent scare in Madras and Pondicherry in 1883, regarding the poisonous character of parasites in fish. The matter was made the subject of a very full enquiry by Dr. Furnell, the Sanitary Commissioner, the result being that the parasites were discovered to be harmless. Professor Cobbold, who was communicated with, wrote: "All your marine fishes have *entozoa,* but probably none of them are injurious to man." All these parasites are killed by cooking. Chevers speaks of a case reported to him from Pondicherry in 1861, in which a family of three were attacked with vertigo and very great feebleness in the limbs after having eaten of a curry made of the *Gobus criniger.* Dr. Collas made some experiments with the fish, and found that it caused the death of several fowls, two only which had eaten the caudal por-

tions of the fish, escaping with life. Dr. Collas also ascertained that native females, before cooking this fish, " take extreme care to remove the head and intestines, and to wash the fish thoroughly. Dr. Taylor suggests that the cause of certain fish being sometimes poisonous in tropical seas, may perhaps be assigned to the nature of the food (acrid mollusca).

Chevers mentions a case in which eleven girls were poisoned by eating a *Rohee* fish caught in their own tank. This fish is a common article of food. The girls recovered. Some fish, says Blyth, possess, in portions of the body, a property which produces, when eaten, all the effects of poisons. This is true, for example of the perches, gurnards, flounders, spares, gobies, sardines and globe fishes, the last including two forms, the *diodon* and *tetrodon.* The parts most dangerous are the spawn and the liver. Not a few fishes can be eaten safely when young, but afterwards they become unwholesome, as, for instance, *Lethrinus mambo.* Sometimes it would seem that a poisonous property is imparted to an otherwise wholesome fish from its food, thus it has been noticed that the *Meletta venenosa* is only poisonous when it feeds on a certain green monad. Taylor quotes a case which occurred to Mr. Maunder (*Lancet,* July 30, 1864). A man, *æt.* [illegible], ate a portion of a mackerel and complained of not liking it. On the third day an eruption broke out, and on the ninth he died.

Of all the varieties of shell-fish, the common mussel appears to be the most dangerous. Two cases are quoted by Christison, which proved fatal,—one in three, and the other in seven hours. The symptoms of this particular poisoning are uneasiness and sense of weight in the stomach, numbness in the extremities; heat, dryness and constriction in the mouth and throat; thirst, shivering, difficulty of breathing, cramps in the legs, swelling and inflammation of the eyelids, with a profuse secretion of tears, and heat and itching of the skin, followed by an eruption resembling nettle-rash. These symptoms are sometimes accompanied by colic, vomiting and purging.

The usual symptoms of poisoning by fish are nausea, vomiting, diarrhœa, great depression of the pulse, and painful cramps in the limbs.

The globe fish.

The globe fish appears to possess peculiarly poisonous properties, especially in the liver, and Blyth quotes, from the Linnean Transactions for November 1860, the case of a fatal accident that occurred on board the Dutch ship *Postillion* at the Cape of Good Hope. The boatswain and purser's steward partook of the liver of the *toad* or diodon. Within twenty minutes the steward died. In ten minutes the boatswain was violently ill; the face flushed, the eyes glistening, and the pupils contracted; there was cyanosis of the face, the pulse was weak and intermittent, and swallowing was difficult. The breathing became embarrassed, and the body generally paralysed. Death took place in seventeen minutes. The liver of one fish only is said to have been eaten. This might weigh four drachms. If the account given is litorally correct, the intensity of the poison equals that of any known substance.

Case of the *Postillion.*

Sea snakes.

The sea snake, found in the Bay of Bengal and Indian Ocean, and which is frequently brought up by the fishermen in their nets, is very poisonous. A case is recorded of a sailor in the Madras roads, who was bitten by a sea snake about seven feet six inches long, which had been caught from the side of the ship. The man at first took no notice of the bite, but about two hours afterwards he was attacked with symptoms not unlike those of hydrophobia, and died in an hour and a half, or in less than four hours from the time he was bitten. The bite was on the index finger.

(4) Poisonous spiders, wasps, bees, and other insects, seem to call for no notice here. Occasionally it has happened that they have been used for purposes of torture, but in such a case the medical jurisprudent could add little to the weight of the evidence produced.

Poisonous snakes.

(5) *Poisonous snakes.*—Snake poison, especially that of the cobra, is amongst the most deadly of poisons. In almost all countries snakes have been at times used for purposes of homicide, such as shutting up prisoners in dungeons infested

by them. A crime of this kind, however, could scarcely be committed now. The poison itself is never used for criminal purposes, and need not therefore be further noticed here. As regards the reported deaths from snake-bites, this subject has been alluded to in detail under the head of suicides and accidental deaths, and it has been pointed out that there is reason to believe that many of the deaths reported to have been accidental or from snake-bite, are in reality due to homicide.

Cantharides.

(6) *Cantharides.*—This poison is used medicinally in the British pharmacopœia; and it, or the Indian *Mylabris Cichorii*, is also largely used by native doctors, especially as an aphrodisiac, and occasionally causes deaths. It is difficult to state the amount of a fatal dose of cantharadin. The smallest dose of the tincture which has proved fatal, was an ounce (Taylor), equal to about ·25 grains of cantharadin. There have, however, been recoveries from much larger doses.

Symptoms.

If taken in small quantities there ensues immediately a feeling of warmth in the mouth and stomach, salivation, pulse more frequent than in health, a pleasant feeling of warmth all over the body, and some sexual excitement lasting three hours. In half an hour there was abdominal pain, diarrhœa and tenesmus, and frequent painful micturition. These symptoms subsided in a few hours, but there was a want of appetite and pain about the kidneys, lasting until the following day. In large quantities the symptoms have been as follows (whether fatal or not): Immediate burning in the mouth and throat, extending to the stomach and alimentary canal, and increasing in intensity until there is considerable pain. Then follow salivation, difficulty in swallowing and vomiting, irritation of the bladder, priapism, and strangury are all present. The pulse is accelerated, the breathing disturbed, there are pains in the head, and often dilated pupils, giddiness, insensibility, delirium, and convulsions. The desire to micturate is urgent, the urine generally bloody and contains pus.

Post mortem appearances.

In the *post mortem* examination, the mouth will be found swollen; tonsils ulcerated, the gullet, stomach and intestines inflamed, and the mucous membrane of the intestines covered with purulent matter. There is sometimes perforation. In all cases there is inflammation of the kidneys and urinary passages.

Cases of cantharides-poisoning are rare in this country.

(7) *Ptomaines* is the name given to the alkaloids which are products of decomposition of animal tissues after death, and are here alluded to simply because a question may sometimes be raised, as in the *Lamson* case, (*see* aconite), whether the alkaloid found in a *post mortem* is not of cadaveric origin. All putrefying animal substances contain more or less poisonous matter, and the subject of cadaveric alkaloids has as yet not been completely studied. It has been asserted recently, that toxic principles in minute quantities, may be separated from the urine and saliva of healthy persons, and it is supposed that, in the case of disease, the blood may become loaded with excrementitious matters, and the poisons be thus self-produced. Blyth cites a case of a young woman who died whilst suffering under diabetes, with symptoms of narcotic-poisoning; and Selmi has found poisonous principles in the urine in other diseases. Cadaveric alkaloids, however, exist in such extremely minute quantities, that they can rarely, if ever, affect the detection of poisonous vegetable alkaloids by chemical or physiological tests.

(8) Poisoning by diseased or putrid meat and food, is probably more due to the growth of pernicious microphytes than to the purely chemical devolopment of poisonous substances.

This is a subject which scarcely comes within the scope of this work, although it may be remarked that, in 1871, some rice, contaminated with cholera poison, propagated the disease to seventy-three persons (*Lancet*, September 21 and 28, 1878).

CHAPTER X.

CHEMICO-LEGAL EXAMINATIONS.

(*From G. O., 30th May* 1883, *No.* 1062.)

THE following instructions are divided into two sections, *viz.*:—

SECTION I.—Containing rules for the guidance of magisterial and police officers.

SECTION II.—Containing rules for the guidance of medical officers. Neither section is complete by itself, the two sections being complementary to one another.

Section I.

The following instructions are issued for the guidance of magistrates, superintendents and assistant superintendents of police with regard to the transmission of substances to the chemical examiner for examination, in cases of suspected poisoning, or other cases in which the aid of the chemical examiner may be required.

2. In future, substances will not be forwarded by medical officers to the chemical examiner, except upon receipt of an order to that effect from a magistrate, superintendent or assistant superintendent of police. It will therefore be necessary that orders for the transmission of substances to the chemical examiner for analysis, should be issued with promptitude. And an order should invariably be granted, if the medical officer consider it advisable to obtain the opinion of the chemical examiner; whilst, on the other hand, magistrates, superintendents and assistant superintendents of police should issue an order for examination, if they consider it desirable to consult the chemical examiner,

although the opinion of the medical officer be adverse to such a proceeding.

3. Magistrates, superintendents and assistant superintendents of police on instructing medical officers to forward articles for analysis to the chemical examiner to Government should, at the same time, address the latter officer, quoting the number and date of their order to the medical officer, and should furnish the chemical examiner with a brief summary of the history of the case.

4. The principal points on which magistrates, superintendents and assistant superintendents of police, in cases of suspected poisoning, should furnish information to the chemical examiner, are as follows:—

a. What interval was there between the last eating or drinking, and the first appearance of symptoms of poisoning.

b. What interval was there between the last eating or drinking and death (if this occurred).

c. What were the first symptoms.

d. Were any of the following symptoms present? If so, state which:—

(*a*) Vomiting and purging.
(*b*) Deep sleep.
(*c*) Tingling of the skin and throat.
(*d*) Convulsions or twitchings of the muscles.
(*e*) Delirium and clutching at imaginary objects.
(*e*) Were any other symptoms noticed?
(*f*) Did any other persons partake of the suspected food or drink, and did they also suffer from similar or other symptoms of poisoning?

5. Any other information available, likely to prove serviceable as a guide to the class of poison administered, should at the same time be furnished.

6. Certificates of chemical analysis are not to be accepted from medical officers, as these officers are not in a position to conduct analyses as they should be carried out for judicial purposes. But any medical officer, who may be provided with a suitable microscope, should be able to

recognise *recent* blood stains, and to conduct examinations of suspected seminal stains.

7. In every case of suspected human or cattle-poisoning, it is desirable, that all the substances requiring analysis should be packed and forwarded to the chemical examiner, by the nearest medical officer. If special circumstances should render it desirable to forward any articles directly to the chemical examiner, the instructions given in Section II, paras. 4—12, must be carefully attended to.

8. **Suspected Blood Stains.**—Articles requiring examination, for the presence of blood stains, may, if desirable, (*vide* para. 6), be forwarded direct to the chemical examiner, the following rules being strictly attended to:—

(1) When clothes are sent up, any stains considered to be suspicious, should be indicated by means of pencil marks or pins. Stains on walls, floors, the ground, or articles of furniture, &c., are not to be scraped off. But the stained area is to be carefully cut out; and when the material is brittle, as in the case of earth or chunam, it should be carefully wrapped in cotton wool and packed in a box, so that the surface may be preserved from injury.

(2) All articles requiring examination should be carefully labelled, and each label should bear the signature of the forwarding officer and the number and date of the letter of advice addressed to the chemical examiner. All parcels should be carefully sealed by the despatching officer and packed in such a manner that they cannot be opened without destroying the seal. The seal used should be the same throughout, and a private seal, or an official seal, which is kept in safe custody. A letter of advice should be separately forwarded to the chemical examiner. This letter should contain:

a. An impression of the seal used in closing the packets and description thereof.

b. A list of the articles forwarded, and a statement as to how the articles have been forwarded.

c. Information as to whether any of the weapons, clothes, &c., are to be returned after examination.

9. **Miscellaneous Examinations.**—Magistrates, on forwarding coins, documents, salines, liquors, &c., to the chemical examiner, should follow the instructions laid down in para. 8, clause 2, and in Section II, para. 11, so far as they may be applicable; and should be careful to include in their letter of advice to the chemical examiner, information as to the nature and object of the examination required, and to furnish any other information likely to assist the chemical examiner in making the required examination.

10. **Analysis of Water.**—*Vide* Section II, para. 15.

Section II.—Instructions for the Guidance of Medical Officers.

Medical officers in charge of hospitals and dispensaries, are required to maintain a supply of methylated spirit and suitable bottles, &c., in readiness for the transmission of viscera and other matters to the chemical examiner, when occasion may arise. In cases of suspected poisoning it is exceedingly important that viscera and other suspected matters, liable to rapid decomposition, should be placed in spirit as soon as practicable. And every care should be taken lest doubt may be raised in court as to the identity of articles likely to require examination, or as to the possibility of their having been accidentally contaminated or improperly interfered with.

2. *Post mortem* examinations are to be made as thoroughly as circumstances will permit, whenever desired by magisterial or police officers. Attendance upon midwifery cases, or other similar excuses, will not exempt medical officers from the performance of the too frequently unpleasant, though most important, duty of making a *post mortem* examination. Advanced decomposition does not prevent the detection of metallic poisons in the body. Hence remains of viscera may be forwarded for examination, when the

condition of the body is such as to render any attempt at dissection useless.

3. On making a *post mortem* examination, whenever there is any suspicion of poisoning, the stomach should be tied at both ends (a double ligature being applied at the pyloric extremity, so that the contents of the intestines may not escape,) and removed from the body in such a manner that its contents may be retained; after removal it should be opened, the contents received into a perfectly clean bottle, and the mucous surface of the stomach carefully examined, its appearance noted, and any suspicious particles found adherent thereto should be picked off with a pair of forceps, and placed in a separate small phial for transmission. And the mucous membrane of the mouth, pharynx and œsophagus should be examined, and any unusual appearance or marks of corrosion thereon carefully noted.

4. In all cases of death from presumed poisoning, the following articles should be forwarded for analysis, each in a separate bottle, unless otherwise indicated. It will, however, be understood that other matters should be forwarded if, in the opinion of the medical officer, the special circumstances of any case render such a proceeding advisable:—

(*A*) Stomach.

(*B*) Contents of the stomach which may, if it be convenient, be put in the same bottle with the stomach.

(*C*) Suspicious particles (if any have been found) removed from the mucous membrane of the stomach.

(*D*) A portion of the liver not less than 16 oz. in weight, or the whole liver, if it weigh less than 16 oz., and one kidney.

(*E*) The vomited matter, if any. The earlier and the later vomits should, when practicable, be sent up in different bottles; and the labels should state at what period the matters were emitted. Special directions are given in para. 6 for the disposal of vomited matters mixed with earth, &c.

(*F*) A specimen of the spirit used. Four ounces is sufficient.

When it is suspected that a vegetable poison has been used, the following matters should also be forwarded:—

(*G*) The contents of the small intestines.

(*H*) Any urine which may have been separately collected after the commencement of symptoms, or found in the bladder after death.

5. Strong methylated spirit should in all cases be added, as laid down in the rules for the transmission of articles for analysis, detailed in para. 11, to the contents of bottles *A, D, G, H,* and also to the contents of bottles *B* and *E,* unless it be suspected that alcoholic-poisoning has been the cause of death. No spirit need be added to the contents of bottle *C.* Care should be taken that no vessel containing fluid matters is quite filled.

6. Vomited and purged matters are frequently received by medical officers mixed with earth, &c. If the admixture of earth be sufficient to render the evacuated matters dry and inoffensive, they may be packed without spirit in any convenient manner, otherwise they must be packed with spirit. Vomited and purged matters, if they have, as frequently happens, been allowed to fall on the ground, should be carefully scraped up, not taking more earth than is necessary. The superficial scrapings should be packed separately. It is rarely necessary to remove the earth to a depth greater than half an inch, even in cases of suspected metallic poisoning, unless the soil be of a very loose character. Except when a metallic poison is suspected, it is very rarely necessary to forward purged matters.

7. If articles of food, medicine, &c., suspected to have been the vehicle by which poison has been administered, require examination, they should each be packed up separately and spirit invariably added, as in the case of viscera, to such as are liable to decomposition. Fruits, such as the plantain and custard-apple, if suspected to contain poison, should be carefully inspected, and if it should appear that

some foreign substance has been inserted, this should be picked out and sent up for examination. If no suspicious substance can be discovered, the fruit should be forwarded.

8. After having made a *post mortem* examination in a case of suspected poisoning, and having preserved in spirit all articles liable to rapid decomposition, which are likely to require examination, the medical officer should report the result of his examination to the police, and on receipt of an order from a magistrate, or from a superintendent or assistant superintendent of police, but not before, forward the viscera of the deceased, and such other articles as may require analysis, to the chemical examiner to Government, for examination. In cases where no death has occurred, but where it is suspected that poison has been administered, the medical officer, having preserved in spirit all articles liable to rapid decomposition, which are likely to require examination, should similarly report the case to the police, and on receipt of an order from a magistrate, superintendent or assistant superintendent of police, forward the vomited matter or contents of the stomach removed by the stomach pump, of the affected individual, or other matters requiring analysis, to the chemical examiner to Government. Though magistrates, superintendents and assistant superintendents of police, are required to grant an order for analysis, should the medical officer consider such an examination necessary, they can, if they consider it advisable, order viscera, &c., to be sent to the chemical examiner, when, in the opinion of the medical officer, such a proceeding may be quite unnecessary.

9. When, on receipt of the necessary order, a medical officer forwards articles to the chemical examiner for examination, he should address at the same-time a letter to the chemical examiner, advising him of their despatch. This letter should contain—

- (*a*) An impression of the seal used in closing the bottles, and a description thereof.
- (*b*) A list of the articles forwarded, and a statement as to how the articles have been forwarded.

(c) The name of the officer from whom the order has been received to forward the articles, and the number and date of such order.

(d) A detailed account of the *post mortem* appearances observed.

(e) If he has seen the case during life, an account of the symptoms observed, and a statement of the treatment, if any, adopted.

10. All bottles and packets should be carefully sealed by the medical officer, and closed in such a manner that they cannot be opened without destroying the seal. The seal used should be the same throughout, and a private seal, or an official seal, which is always in safe keeping. Each bottle or packet should be labelled, and each label should bear the number and date of the letter of advice to the chemical examiner relative to the case, as well as a short description of the contents, and should be signed by the medical officer.

11. **Rules for the transmission of Substances for Analysis.**—Suspected substances may be forwarded by post, carriage bearing, by passenger train, or steamer, or in charge of a constable. The latter method is recommended in all cases in which wealthy or influential parties are implicated. Officers forwarding viscera, &c., by post, by rail, or steamer, or by constable to the chemical examiner, will be held personally responsible that the following instructions are carefully followed :—

Transmission by post.—When viscera, &c., are forwarded through the post, the following rules are to be observed :—

(1) The suspected viscus, or other portion of the body, or other substance liable to decomposition requiring to be sent for examination, should be enclosed in a glass bottle or well glazed earthenware jar, provided with a well fitting stopper or sound cork.

(2) If liable to decomposition, it should be immersed in methylated spirits of wine, which should be used in the proportion of one-third of the bulk

of the material, and care should be taken that no vessel containing liquid matters is quite filled.

N.B.—The use of spirits of wine in packing viscera should be invariable, whether the season is hot or cold, and care should be taken that common bazaar spirit is not used.

(3) The stopper or cork should be carefully tied down with bladder, and large corks should be coated over externally with wax, glue, or tar. To ascertain that it has been securely closed, the bottle or jar should be placed for five minutes with its mouth down.

(4) The glass bottle or jar should then be placed in a strong wooden or extra strong tin box, which should be large enough to allow of a layer of raw cotton, at least one inch thick, being put between the bottle or jar, and the box.

(5) The box itself should be encased in common garah cloth, which should be sealed in accordance with the usual rules of the post office as to parcels.

(6) When articles are forwarded by post to the chemical examiner to Government, each package should be franked externally with the name and address of the officer forwarding the articles, and a declaration of contents to the officials of the postal department is unnecessary, and should not be made.

(7) At all stations where there is a district civil surgeon, the parcels should, when practicable, be sent to the post office by that officer, and not by a subordinate officer, but where there is no civil surgeon, substances may be packed and forwarded direct to the chemical examiner, by the subordinate officer in charge of the hospital or dispensary.

Transmission by rail or steamer.—When viscera, &c., are forwarded by rail or steamer, it is unnecessary to encase the box in cloth, but with this exception the rules for forwarding articles through the post must be observed in forwarding articles by passenger train or steamer.

Transmission by constable.—When viscera, &c., are forwarded in charge of a constable, it will not be necessary to pack the bottles, &c., in a strong box, in order to protect them from rough handling during transit. But it is desirable that glass bottles containing viscera, &c., should be wrapped in cloth or paper, so as not to be offensive to other passengers.

In every other respect the same rules should be observed as in the transmission of viscera, &c., by rail.

12. **Suspected Blood Stains.**—Medical officers are in many instances expected to deal with these cases themselves.—*Vide* Section I, paras. 6 and 8.

13. **Suspected Seminal Stains.**—*Vide* Section I, para. 6. As the clothes requiring examination in these cases are usually exceedingly dirty, it is advisable, when practicable, to cut out any suspicious stains and forward them only for examination, instead of the whole garment. In cutting out stains, about half an inch of the surrounding cloth should be removed also. For information regarding packing and despatch of letter of advice, see instructions under head of Blood Stains.—*Vide* Section I, para. 8.

14. **Cattle Cases**:—

(1) Some precautions should be taken to ensure that viscera, &c., are not sent for examination in cases where death obviously occurred from causes other than poison. A careful search should be made for any indications of the presence of a sui, when this mode of poisoning is suspected, and if anything resembling a sui be found, it should be forwarded for examination. A chemical examination of the viscera is useless in cases of sui-poisoning, as in such cases poison cannot be detected in the viscera.

(2) The entire alimentary canal should be opened, and

its contents inspected for suspicious-looking substances. If any suspicious-looking substance be detected in the alimentary canal, it should be packed in a separate vessel, and spirit should not be added unless necessary for its preservation.

(3) About two pounds of the contents of the stomach, with about a pound of the contents of the intestines, should be placed in a clean glass or well glazed earthen vessel or vessels, and strong methylated spirit added in the proportion of not less than one-fourth of the apparent bulk of the material, when the contents are nearly dry, but if much liquid be present, spirit should be added in the proportion of one-third of the bulk of the material. Also about a pound of the liver, and a similar weight of the stomach, should be placed in a separate clean glass or well glazed earthen vessel, and methylated spirit should be added in the proportion of one-third of the bulk of the material. A sample of the spirit used in packing should also be sent. Four ounces are sufficient.

(4) Dried cattle dung may be sent without addition of spirit.

(5) Suspected cattle poisons rarely require the addition of spirit for their preservation, and spirit should not be used unless necessary.

(6) The instructions given as to the packing and transmission to the chemical examiner of substances requiring chemical examination, in cases of suspected human poisoning, are applicable to these cases, and should be carefully attended to, and the same precautions must be adopted as to sealing and labelling the different vessels.—*Vide* paras. 9, 10 and 11.

(7) When under instructions received from a magistrate or superintendent or assistant superintend-

ent of police a medical officer forwards articles to the chemical examiner for examination, he should at the same time address and forward separately a letter to the chemical examiner, advising their despatch. This letter should contain :—

(*a*) An impression of the seal used in closing the vessels, and a description thereof.

(*b*) A list of the articles forwarded, and information as to how the articles have been forwarded.

(*c*) The mame of the officer from whom the order has been received to forward the articles, and the number and date of such order.

(*d*) Information as to the number and kind of animals affected, and number of deaths.

(*e*) Any information obtainable as to *post mortem* appearances, nature and duration of symptoms, and which may be likely to indicate the probable nature of the poison.

15. **Analysis of Water.**—Before forwarding a sample of water to the chemical examiner for analysis, it is necessary to write to the chemical examiner and ascertain when it will be convenient to receive the sample or samples which may require to be examined. It being desirable that samples should be examined shortly after they are received at the Laboratory.

(2) The duty of collecting the samples should always be undertaken by a responsible person. The employment of peons or servants for this purpose is strictly prohibited. The bottles used should be thoroughly cleansed, and then well washed out twice with water from the same source it is intended to fill them from, just before finally filling them.

(3) Glass-stoppered bottles are best, but if those are not procurable, new corks are to be used with the ordinary quart wine bottle, of light colored glass. In filling the bottles, a little

space should be left between the cork and the water.

(4) Not less than one gallon of each sample of water is to be forwarded.

(5) Each bottle to be labelled with the name of the well, and date of collection.

(6) On forwarding water for analysis, the medical officer should, at the same time, forward separately a letter to the chemical examiner. This letter should contain:—

- (*a*) An impression and description of the seal used in closing the bottles.
- (*b*) Information as to the number of samples sent, and a statement as to how the articles have been forwarded.
- (*c*) An explanation as to the reason for which the examination is required, and information as to by whom it is desired.
- (*d*) A statement as to the source from which each sample was collected, and by whom and when each sample was collected.

THE END.

APPENDIX.

◆

WHAT TO DO IN CASES OF POISONING?

A FEW simple memoranda are here given for the guidance of medical subordinates, village and police officers, and other persons in treating cases of emergency.

In poisoning by the mouth, the first object is to evacuate the poison from the stomach by the use of emetics or the stomach pump.

Emetics.—Copious draughts of tepid water.
Tickling the throat inside with a feather or with the finger.
Mustard and water.
Ipecacuanha.
Zinc sulphate.
Apomorphia (for hypodermic use).

Stomach pump.—In the absence of a pump, a stomach tube, or even a piece of ordinary India-rubber tubing, answers well. One end is passed gently down the gullet to the stomach (about 16 inches from the lips), tepid water, or tea or coffee, is then poured down the tube through a funnel. When some quantity has been thus introduced, the end of the tube should be stopped by the finger while it is brought down to a dependant position, and it is then allowed to deliver into a basin and to empty the stomach by syphon action. When the fluid has ceased to flow, the end of the tube is again lifted up, and the stomach is washed out as before. This should be repeated three or four times.

Narcotic poisoning.—If the patient be able to swallow, give a stimulant emetic. If he be insensible, wash out the stomach with the stomach pump or tube. Vomiting may be induced by the hypodermic injection of apomorphia. Administer hot and strong coffee. Friction to the extremities and occasional cold douche to the head are sometimes useful. If the poison be opium, atropine may be employed with caution as an antidote.

Irritant poisoning.—Wash out the stomach by copious drinks of tepid water or conjee if the patient be vomiting. Otherwise use the stomach tube or an emetic of ipecacuanha, milk, flour and milk, eggs beaten up, and other demulcent drinks may be given as food, and small doses of opium medicinally.

Antidotes have been alluded to when treating of individual poisons. The following has been recommended as a general antidote. It is useful in poisoning by arsenic, mercury, opium, strychnine, and most other poisons; and it ought to be kept ready for use at all dispensaries.

General antidote.—	Magnesia	88 parts.
	Animal charcoal	44 ,,
	Saturated solution of ferrous sulphate ...	100 ,,
	Water	800 ,,

The magnesia and animal charcoal are best kept mixed in a dry state, and they should be weighed out and preserved in a bottle: the 100 parts of iron solution being put in a second bottle. When required for use, the iron solution is mixed with eight times its bulk of water, and the magnesia and animal charcoal are then stirred up with it.

Dose.—A wineglassful, frequently repeated.

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